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The Ingleby Lectures

ON

THE DANGERS AND TREATMENT OF MYOMA OF THE UTERUS.

Delivered at the University of Birmingham on May 7th and 14th, 1908.

BY CHRISTOPHER MARTIN, M.B., C.M. EDIN., F.R.C.S. ENG.,

SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

LECTURE I.

Delivered on May 7th.

GENTLEMEN,—It is admitted on all hands that myoma or fibroid tumour of the uterus is a common condition. I do not know what percentage of women suffer from them; but in a considerable proportion of those who consult a gynæcologist myomata are present and causing trouble. The more I see of the disease, the more I follow up the cases, the more impressed am I by the risks of the condition and the frequency with which grave complications arise. To-day I propose to call your attention to certain of these dangers and in my second lecture to discuss the methods of treatment.

HÆMORRHAGE.

Hæmorrhage from the uterus is the commonest symptom of myoma and is present in the great majority of instances. It varies much in different cases. In some, with even a large fibroid, it is only a rather profuse or prolonged menstruation. In others, with perhaps quite a small growth, there are terrific floodings. The nearer the tumour to the cavity of the uterus the more severe the flooding. Thus in the subserous growths it is slight, in the interstitial it is profuse, and in the submucous and polypi it is excessive. In some cases there is a constant dribbling of blood-stained watery fluid, with monthly exacerbations. In others there are sudden and alarming floodings, with intervals of weeks or months with little or no loss.

Some years ago I was consulted by a woman, aged about 45 years. She had had several severe hæmorrhages, with clear intervals of six or eight weeks. I found that she had a submucous fibroid, about as big as a lemon, just beginning to dilate the cervix. I advised her to have it removed but she shrank from an operation. She consulted a physician who put her on tonics and ordered her to Blackpool. The evening before she was to go away, whilst dining at a friend's house, she began to flood tremendously. She was removed home on an improvised stretcher and when I saw her, about an hour later, she was nearly pulseless. I plugged the vagina with iodoform gauze, renewing it every 48 hours. Each time when I changed the plug the bleeding started afresh. In about ten days she had rallied somewhat and I ventured to remove the growth by enucleation per vaginam. The patient made a good recovery and had no further trouble.

In 1899 a woman suffering from myoma was sent to the Birmingham and Midland Hospital for Women. She had a long history of floodings and when admitted was blanched to the last degree. She was restless, vomiting, and extremely weak. She had a temperature of 100° F. and a rapid, thready, irregular pulse. On examination a large submucous myoma was found. Whilst in hospital no further hæmorrhage occurred; but no operation was attempted, as the patient was too ill. She never rallied from the state of collapse and died about 48 hours after admission, as the direct result of the repeated losses.

It is rare for a patient to actually bleed to death from a myoma. She usually develops a condition of marked chronic anæmia. She has dilated pupils, œdema of the face and feet, loud hæmic murmurs, palpitation, breathlessness, and faintness on the slightest exertion. One of my patients who was admitted in this condition got out of bed to go to the lavatory and fell in a "dead faint" on the floor. She was so weak that I had to keep her in hospital and nurse her up for weeks before I ventured to operate. This chronic anæmia is the chief cause of the brown atrophy and fatty degeneration of the heart muscle which occurs in many cases of neglected fibroid. It is also the main factor in producing thrombosis and phlebitis of the veins of the pelvis and lower limbs, and secondary embolism of the pulmonary artery. These lesions are to blame for some of the deaths after operation; and I think that the responsibility for such deaths rests more with those who have delayed the operation than with the surgeon who performs it.

PAIN AND DISCOMFORT.

Uncomplicated myomata do not as a rule give rise to much pain; certainly there is nothing approaching the agonies of cancer. Most patients complain rather of discomfort and uneasiness. The menstrual periods are sometimes painful, from spasmodic contractions of the uterus endeavouring to expel a submucous tumour. On the other hand, subserous fibroids may attain a great size, and only give rise to inconvenience from their weight and pressure on neighbouring parts. But complicating myoma, there are often other lesions of the pelvic organs, such as adherent and inflamed ovaries and tubes, and then there is severe pain.

PRESSURE SYMPTOMS.

The pressure symptoms of myomata are numerous and frequently call for surgical treatment. Pressure on the rectum causes constipation and hæmorrhoids. Pressure on the iliac veins causes varicose veins of the legs and vulva. Pressure on the sacral plexus of nerves causes neuralgic pains, sciatica, and cramps, though seldom paralysis. Pressure on the uterus may cause backward displacement or even total prolapse of the organ. By far the most serious and distressing group of symptoms are those due to pressure on the urinary organs. Pressure on the urethra or neck of the bladder causes retention of urine. In some cases the first indication of the presence of a myoma is sudden retention of urine, necessitating the passage of a catheter. It usually occurs in young unmarried women. It is generally due to a fibroid in the posterior wall of the uterus, retroverting the uterus and tilting the cervix forwards against the pubes. In fact, these cases remind one very much of the cases of retention due to retroversion of the gravid uterus. In some cases there is a gradually increasing difficulty in passing urine, the patient having to strain and probably never really emptying her bladder. This is a frequent occurrence where the fibroid is impacted in the pelvis and unable to rise into the abdomen. In other instances we find the bladder raised quite out of the pelvis and spread out as a thin flattened bag (like a rubber hot-water bottle) between the abdominal wall and the tumour. In operating on such cases the surgeon in opening the abdomen may easily cut into the bladder. I did so in one case, a patient of Mr. M. Hallwright, the bladder reaching up to the umbilicus, uncovered in front with peritoneum. I sewed up the wound in the bladder, opened the peritoneum higher up, and performed hysterectomy. The patient got well without any bladder trouble, but at the time the accident caused me much anxiety.

In another group of cases the patient is unable to hold her urine for any length of time. Here the tumour presses on the bladder from above so that there is practically no room for it to expand. These patients have to rise in the night, perhaps every hour, to pass urine and they become worn out from want of sleep.

Cystitis seldom occurs as a result of myoma except by infection through a dirty catheter. Should it develop it is a serious complication, as the inflammation may pass up the ureter and cause pyelitis and pyonephrosis. I can recall two deaths caused in this way. If a woman has retention of urine from an impacted fibroid the strictest antiseptic precautions must be observed in drawing off her urine.

Pressure on the ureters is most apt to occur in cases where the tumour is developing in the broad ligament or growing from the cervix. In some instances the ureters are raised up out of the pelvis by the growth burrowing beneath them. In one case, in which I assisted one of my colleagues to perform hysterectomy, he found both ureters lifted up by the tumour and arching over it to reach the bladder, like a pair of braces over one's shoulders. In all such cases there is a great risk of the back pressure on the kidneys causing hydronephrosis, destruction of the renal substance, and death from uræmia.

LESIONS OF THE OVARIES AND TUBES.

Disease of the uterine appendages frequently complicates myoma. In some cases the surgeon opens the abdomen to remove a myoma and finds unexpected lesions in the ovaries and tubes which the tumour had masked, or he may operate

for disease of the appendages and find in addition a small fibroid of the uterus. There are, of course, many cases where before operation both conditions were recognised as present and calling for treatment. The tubal lesions include salpingitis, hydrosalpinx, hæmatosalpinx, and pyosalpinx; the ovarian comprise ovarian cysts large and small, ovarian abscess, and chronic ovaritis. With any of these there may be dense pelvic adhesions matting together uterus, appendages, bowel, and omentum. These complications, especially that of pyosalpinx, add much to the difficulties and dangers of the operation. They are risks, however, that we cannot shirk, as the suffering of the patients without operation is often intense and the relief given complete.

The question arises, Is the myoma responsible in any way for the tubal or ovarian disease? I think, in many cases, it is. It is common knowledge that in most cases of myoma there is more or less endometritis. Further, the tumour may mechanically damage the tubes and ovaries by compression, torsion, and dragging, resulting in hydrosalpinx, hæmatosalpinx, &c. Septic changes may occur in the cavity of the uterus as the result of decomposition of clots or necrosis of submucous growths. Germs may then easily pass from the infected endometrium to the damaged tubes and ovaries, giving rise to salpingitis, pyosalpinx, and ovarian abscess. But I do not say that the myoma is the cause of the ovarian cysts so often found associated with it. We do not know the causes of these conditions. Probably neither the myoma causes the cyst nor the cyst the myoma; but both are due to some common fault in development, the nature of which is at present beyond our grasp. I see no evidence that diseased conditions of the ovaries and tubes can ever cause a myoma to develop in the uterus.

Lesions of the ovaries and tubes are found in about one-third of all cases of myoma submitted to operation. Noble in a study of 2274 cases found diseased conditions recorded in 37 per cent.; whilst they were present in 62 out of 218 cases he personally operated on. Dr. C. J. Cullingworth found them in 22 per cent. and Dr. Mary Scharlieb in 38 per cent. of their cases. In my own cases the proportion was not so high. I have now opened the abdomen 380 times for the treatment of myomata, and I found gross lesions of the uterine appendages in 53 of these (14 per cent.). There were ovarian tumours in 19, chronic or cystic ovaritis in 15, and salpingitis, hydrosalpinx or pyosalpinx in 19 cases.

HEART LESIONS.

It has been shown that myomata, especially those of large size and causing much hæmorrhage, exercise a very pernicious influence on the heart. The repeated hæmorrhages produce chronic anæmia; and, as a result, the heart is badly nourished. A large myoma causes mechanical obstruction to the circulation and increased peripheral resistance. The result is that the heart muscle undergoes fatty degeneration and brown atrophy. The latter condition was found by Fleck in seven out of 11 cases of myoma which died from heart failure. Dr. Thomas Wilson, the Ingleby lecturer of last year, has carefully studied the relation of myoma to heart disease, and says that over 40 per cent. of patients suffering from severe symptoms of myoma have some form of cardiac insufficiency. He urges the careful examination of the heart in all cases of myoma. He points out that ergot is contra-indicated if there be cardiac weakness, for it increases the peripheral resistance by contracting the arterioles. He advises the timely removal of the myoma, before the heart has deteriorated. Should heart disease have already developed the patient should be treated with rest and tonics before being submitted to operation. Finally, in those who recover from the operation a marked improvement takes place in the condition of the heart.

DEGENERATIVE CHANGES.

Myomata are peculiarly liable to various kinds of degeneration; indeed, I know of no other tumour so prone to secondary changes. They are found in about 20 per cent. of the cases. We may divide them conveniently into three great groups: (1) non-malignant degenerations *without* necrosis, occurring in about 14 per cent. of myomata; (2) non-malignant degeneration *with* necrosis, occurring in about 4 per cent. of myomata; and (3) malignant degenerations and complications, occurring in about 4 per cent. of myomata. Let us consider each group in turn.

1. *Non-malignant degenerations.*—This group is a large one and includes many different pathological processes. Amongst the mildest and most innocent are fatty degeneration, hyaline degeneration, and calcareous infiltration. These are found in tumours which have ceased active growth and may be looked upon as signs of their old age. They do not, as a rule, call for active interference. But there are other degenerations characterised by marked activity and rapid growth of the tumour. These include acute lymphatic œdema, myxomatous softening, cystic degeneration, angiomatous changes, adenomatous growths, and the curious condition known as red degeneration. There are certain clinical features common to nearly all these degenerations: (*a*) the tumour is usually, but not invariably, single; (*b*) after a period of quiescence it suddenly begins to grow rapidly, with increased pressure symptoms and often severe pain; (*c*) the tumour changes in consistence, become more elastic and softer; in the cystic variety it fluctuates and gives a thrill like an ovarian cyst; and (*d*) in many cases it becomes more vascular, the enlarged arteries being felt pulsating in its walls and a loud bruit being heard on auscultation. These changes may come on at any age but are most common about the menopause. They may even come on years after the cessation of menstruation. Amongst my 380 abdominal sections for myoma I found non-malignant degeneration recorded in 19 cases (5 per cent.), of which no less than 13 were examples of cystic degeneration.

Red degeneration.—Let me briefly call your attention to the curious condition known as red degeneration. It is sometimes called "hæmorrhagic degeneration." It is probably a form of acute aseptic necrosis and hence is termed by some writers "red necrobiosis." In Noble's collection of 2274 cases of myoma it is recorded 13 times, or 1 in 175. Whenever it does occur it causes serious symptoms and calls for immediate operation. Its essential cause is unknown. It is specially liable to occur in young pregnant women. The onset is sudden. There is acute pain with vomiting, a rapid increase in the size of the tumour, and often some degree of fever.

In a case on which I recently operated the symptoms were so sudden and severe that I thought the patient had a strangulated ovarian tumour. She was a young married woman who was about three months pregnant, and had no suspicion that she had a tumour of any kind. One evening she was seized with acute colicky pain in the pelvis, with vomiting and faintness. Her medical attendant, Dr. G. H. Mounsey, found her with some distension and a rapid pulse. She was obviously pregnant and to one side of the uterus was an elastic semi-cystic tumour. A few hours later she was worse and the tumour was distinctly larger. I was called in, diagnosed a strangulated ovarian tumour, and advised immediate operation. I opened her abdomen and found she was pregnant, whilst to one side of the uterus was a large myoma, undergoing red degeneration. I enucleated it without removing the pregnancy or the rest of the uterus. She aborted about 24 hours after the operation but otherwise did well. On cutting open the tumour it was found to be of a curious red colour, quite different from that of the ordinary whitish myoma. The tint varied from a brick-red to a dark mahogany-brown. The surface of the section was smooth and showed little trace of the fibrous structure of a myoma. Dr. L. Mackey has recently made a microscopic examination of a specimen for me and reports as follows: "The central portion of the tumour has undergone a degenerative change and consists of a red mucinoid fluid thick with the débris of the growth. The peripheral portion, though reddish, is firm and tough. The microscopic appearances show it to be a fibro-myoma. The fibrous tissue is hyaline and almost structureless. The muscle cells show very elongated rod-like nuclei. As the central cavity is approached the onset of a degenerative change is shown by the poorness of the staining of both fibrous tissue and muscle; but there is no sign of any inflammatory process. The débris in the cavity consists of fragments of fibrous and muscular tissue, the nuclei of which stand out from the more degenerated protoplasm. The fragments are œdematous, the lymph spaces being dilated. Mixed with the fragments is a good deal of old hæmorrhage and broken down red corpuscles. The condition appears to be that described as red degeneration and microscopically is a sort of necrosis without inflammation."

2. *Necrosis.*—We now come to the cases where necrosis or death of a fibroid occurs. It happens in about 4 per cent. of all myomata. When a cystic fibroid undergoes necrosis the fluid contents become converted into a kind of pus and then the growth is termed a suppurating fibroid. It is rare for an interstitial myoma to necrose, probably because it is well

supplied with blood on all sides. The submucous and polypoid varieties are, however, very prone to do so.

Let us consider how the necrosis is brought about. A myoma is nourished almost entirely by its vascular capsule, the growth itself being practically free from blood-vessels. The growth tends to become more and more submucous and is finally covered on the inner aspect by mucous membrane only. The uterine contractions try to force the fibroid through the cervix, just as in labour the fœtal head is driven down. The patch of mucous membrane, gripped by the cervical ring, becomes devitalised and sloughs, laying bare the myoma proper. This is now nourished on its outer aspect only, and imperfectly there. Germs get access to it from the vagina and complete the work of destruction. The tumour dies, becomes greenish grey or blackish grey in colour, and breaks down into a horribly offensive, soft, mushy mass, which is slowly extruded through the cervix.

There are other modes by which a submucous myoma may become infected and necrose: (*a*) by the passage of a dirty sound in examining the uterus; (*b*) by an intra-uterine operation, such as curetting, done with dirty hands or instruments; or (*c*) by the puncture of the growth with Apostoli's electrolytic needles (this was a fertile source of disaster when this method was in fashion). However produced, when once necrosis has set in, it is unmistakeable. The stench of these cases is sometimes appalling, filling the whole house. At the same time, the patient becomes infected and poisoned by toxins absorbed from the gangrenous tumour; and, if not speedily relieved by operation, will die from septicæmia or pyæmia. In some of my most putrid cases, however, I have been amazed by the absence of any systemic infection, the patient being only distressed by the disgusting smell of her discharges. This, no doubt, must be explained by the slow onset of the process, allowing for self-immunisation.

These cases of sloughing fibroid may be mistaken for advanced cancer of the uterus—an error which would be disastrous if it led the surgeon to treat the case as hopeless and not attempt to remove the growth. It is not always easy to differentiate without a thorough examination under an anæsthetic. If the cervix be softened and dilated by a tumour being forced through it the tumour is a fibroid and not a cancer. If, beyond the necrosing part, a smooth rounded mass can be felt covered by mucous membrane it is probably a fibroid. If the protruding part be brittle and friable and crumble under the finger it is a cancer. A sloughing fibroid can be pulled away with forceps in stringy shreds or rounded masses, and on close investigation of these fragments some trace of the fibrous structure of a myoma may be seen. If still in doubt, a microscopic examination of a bit of débris will clear up the matter. It is of the utmost importance that a correct diagnosis be made, as an early operation will save the life of the patient if it be a fibroid; indeed, I know of no cases which yield more brilliant results to timely surgical interference.

3. *Malignant degeneration.*—The researches of modern pathologists and gynæcologists show that there is a marked tendency for a myoma to become directly transformed into a sarcoma. Winter examined microscopically 500 myomata and found sarcomatous changes in 4 per cent. Martin found sarcomatous degeneration in 6 out of 205, Cullingworth in 1 out of 100, Scharlieb in 6 out of 100, Haultain in 2 out of 120, Hirst in 3 out of 189, and McDowel in 20 out of 1000 cases. In my own 380 abdominal sections for myoma I found sarcomatous changes in 9 cases. Adding these cases together we find it occurs in a little over 2 per cent. But this list includes only the sarcomata recognised as originating in myomata. Probably many other cases, thought to be primary sarcomata, have originated in unrecognised myomata. Hence I think that Winter's figures give the truer proportion, viz., 4 per cent.

There can be no doubt that the subjects of myoma are specially prone to develop cancer of the uterus. It is not a degeneration or transformation of the myoma into cancer, but an associated lesion. In my own practice I found in 380 operations for myoma 6 cases complicated with cancer (1·6 per cent.). Noble, in 4830 cases he collected, found cancer present in 2·8 per cent., whilst it was present in 4 per cent. of the cases he himself had operated on. Of these 1·4 per cent. were cancer of the cervix and 2·6 per cent. cancer of the body of the uterus. Now it must be remembered that cancer of the cervix is ten times more common in women generally than is cancer of the body. If, therefore, cancer occurs twice as often in the body as in the cervix of myomatous uteri, there must be something in myomata which predisposes to the development of corporeal cancer.

RELATION TO PREGNANCY.

Myomata tend to cause sterility. Mann found that 55 per cent. of married women with fibroids never conceived. Amongst married women generally only 15 per cent. are sterile, so there is nearly four times more sterility in myomatous women than in other women. It is fortunate it is so, as there can be no doubt that the occurrence of pregnancy adds greatly to the dangers of myoma. A woman with a fibroid is safer single than married and a married woman with a fibroid is safer sterile than pregnant. Some authors, noting that myomatous women are often sterile, have suggested that sterility is a cause of myomata. They suppose that these women ardently long to have children and that their unsatisfied maternal desires keep up a congested condition of the uterus and in some mysterious way produce a myoma. I do not believe in transcendental pathology and I think these theorists put the cart before the horse. The myoma causes the sterility and not the sterility the myoma. It is, moreover, easy to understand how the presence of one or more fibroid nodules imbedded in the womb may stimulate its sensory nerves and awaken strong maternal passions.

Let us now consider the results of pregnancy in a myomatous uterus. Whilst some women with moderately large fibroids go through pregnancy and labour without a hitch it is usually a serious complication. If the tumour be submucous or interstitial the patient generally aborts about the fourth month and this is the best thing that could happen for her. I have seen several cases of severe uncontrollable vomiting in pregnant women with interstitial fibroids, due, I believe, to the inability of the uterus to expand with the growth of the pregnancy. In most of these cases abortion had to be artificially induced. When abortion occurs, whether spontaneously or induced, there are apt to be retention of placental tissue and alarming hæmorrhage from imperfect contraction of the uterus. Another risk is that, following an abortion a submucous myoma may necrose and be a source of sepsis. I have already referred to the special tendency of red degeneration to occur in pregnancy.

A fibroid may be so large that it may mechanically prevent the normal development of the pregnant uterus and necessitate surgical interference. Some years ago I had sent to me, by Dr. C. Davidson of Coventry, a patient with a huge myoma and also a five months pregnancy. She was in great distress, and there was no room, apparently, for any further growth of the pregnancy. So I opened her abdomen and removed the entire uterus.

In some cases the fibroid is impacted in the pelvis below the pregnancy in such a way that it is obvious the child cannot be born *per vias naturales*. Wherever situated a large fibroid adds greatly to the risks of a full-time labour. It may interfere with the contractions of the uterus and so delay delivery. It may, by preventing contraction after delivery, cause retention of the placenta or alarming hæmorrhage. As a result of bruising or torsion the growth may undergo necrosis and cause fatal sepsis. It will thus be seen that the combination of pregnancy with a *large* myoma is a grave one, full of danger for the patient and anxiety for the medical attendant. The mortality is great, as in many cases surgical aid is not called in till it is too late.

SUMMARY OF RISKS.

Let me now briefly summarise the risks which a woman with a fibroid tumour runs. 1. More than half the patients suffer from severe hæmorrhage and chronic anæmia. 2. Many patients develop heart disease, phlebitis, thrombosis, and embolism. 3. Other patients get retention of urine, cystitis, pyelitis, and hydronephrosis. 4. In about one-third of the cases the ovaries and tubes become diseased. 5. In about one-fifth of the cases some form of degeneration occurs, ending in nearly 5 per cent. in necrosis of the growth. 4 per cent. develop sarcoma and another 4 per cent. cancer. 6. More than half the patients are sterile, but should pregnancy occur the dangers increase with the progress of the gestation.

NATURAL CURE OF FIBROIDS.

There are three modes by which a "natural cure" of a myoma may take place: (1) a submucous fibroid may necrose and slough away, or it may be extruded through the cervix as a polypus, and drop off; (2) a myoma may participate in the involution of the puerperium and disappear; or (3) it may undergo atrophy at the menopause.

The first mode—by necrosis and sloughing away of the tumour—I have already discussed. Needless to say, its risks are much greater than those of the most formidable of the modern operations for fibroids. The gradual conversion of a

submucous fibroid into a polypus, followed by its extrusion and separation *en masse*, does undoubtedly occur. But it is a long, tedious, and dangerous process, more likely to kill the patient than to cure her.

The second process of natural cure—viz., by its sharing in the involution of the uterus after delivery—is also uncertain, and is more apparent than real. Myomata are very sensitive to changes in their blood-supply. When pregnancy occurs the increased vascularity of the womb causes the tumours to take on active growth. They often become more mobile—due no doubt to the softening of the surrounding uterine wall. An interstitial fibroid seems sometimes to be converted into a subserous one, by being pushed outwards toward the peritoneum by the growing ovum. Should the patient pull safely through the pregnancy and labour, the blood-supply of the uterus rapidly diminishes. The tumour then shares in the process of involution, shrinks in size, and in some cases seems to disappear. This fortunate result is, however, by no means a certainty, and in many cases the tumour, so far from shrinking, takes on more active development. It is probable, as Dakin says, that very few fibroids are absorbed; but many degenerate, become inflamed, or undergo necrosis. Only a few months ago I had to operate on a lady who had a large subserous fibroid growing from the top of her uterus. She had been confined three months before, when the tumour was discovered by her medical attendant (Mr. J. A. L. Peirce of Langley). Instead of shrinking during the puerperium it took on active growth. I opened her abdomen and found a large cystic fibroid attached by a broad pedicle to the top of the fundus. I removed it by dividing the pedicle, saving the rest of the uterus.

Lastly, a natural cure may occur by the absorption and disappearance of a fibroid at the menopause. This phenomenon was at one time looked upon as almost a certainty. The woman was told that if only she would wait till the change of life the growth would disappear and all her troubles would be at an end. But a sad experience shows that these hopes are illusory. As a matter of fact, the presence of a fibroid delays the natural change of life, and instead of the hæmorrhages ceasing at 45 years of age they go on with increased vehemence until the patient is 50 years of age, or 55 years, or even older. Let me relate a case in point.

In 1898 I was consulted by a lady, aged 46 years, who had a myoma about as large as a five-months pregnancy reaching to one inch below the umbilicus. It caused severe and irregular hæmorrhages but not much pain. I advised ergot and hydrastis, told her to spend the whole of each period in bed, and urged her to wait for the menopause. Well, she followed my advice faithfully for years. I saw her at intervals and encouraged her to persevere and to wait for nature's cure. But, like the mirage in the desert, it kept receding into the distance and mocking her hopes. Finally, last year I had to perform hysterectomy. The tumour had now grown well above the umbilicus whilst the repeated hæmorrhages had blanched the patient and reduced her vitality. Considering her weak state she made a good recovery from the operation, but I feel that by following my advice to wait for the climacteric she wasted many of the best years of her life.

Even if the hæmorrhage ceases, this only removes one of the many risks of the condition. It is just at this period that the most serious forms of degeneration are apt to supervene. Noble, in his study of 4880 cases, says that he is not acquainted with a single authentic case in which a fibroid has entirely disappeared at or after the menopause.

Realising, on the one hand, the manifold dangers of myomata—the pressure symptoms, the cardiac and renal complications, the risks of degeneration, necrosis and malignant disease—and, on the other hand, the safety and the certainty of cure offered by modern surgical operation, I hold that we are not now justified in advising a patient with a troublesome fibroid to wait for the menopause.

UNIVERSITY COLLEGE HOSPITAL.—The committee is issuing a special appeal on behalf of this charity in which it is stated that the hospital has been compelled recently to sell £4000 of its small available funded property in order to pay overdue accounts of 1907. Failing a substantial response it appears that some of the beds must be closed, which would be doubly regrettable in an institution which had been so recently and handsomely equipped. The annual income required is £19,000.

Oliver-Sharpey Lectures

ON THE

PRESENT CONDITION OF OUR KNOWLEDGE REGARDING THE FUNCTIONS OF THE SUPRARENAL CAPSULES.

Delivered before the Royal College of Physicians of London on April 7th and 9th, 1908,

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LECTURE II.[1]

Delivered on April 9th.

GENTLEMEN,—We may now return to the results of the investigations made by Dr. Oliver and myself during the winter of 1893–94. The first point established was the *punctum saliens* of suprarenal activity—namely, that intravenous injection of the merest trace of suprarenal extract is capable of producing a striking rise of blood pressure; while with larger doses the rise may be so great as to be beyond the registering power of a mercurial manometer of ordinary length, the mercury being driven out from the open end of the manometer tube. We found this rise of blood pressure to be due to two causes—namely, (1) contraction of arterioles; and (2) increased rate and energy of heart beat. We further noticed that sometimes in the early stages of action of the extract the heart, instead of being augmented and accelerated in its action, is strongly inhibited, so much so that the auricles may cease beating altogether, the circulation being maintained by the slow independent rhythm of the ventricles. When this happens two antagonistic influences are at work: the one, constriction of the arterioles, tending to raise the blood pressure; and the other, cardiac inhibition, tending to lower it. The former influence is, however, always the stronger, and if both vagi be cut, or if a small dose of atropine be given, the cardiac inhibition is no longer visible but is entirely replaced by acceleration and augmentation. This, of course, assists instead of impeding the effect of vaso-constriction, the result being that the blood pressure rises enormously. The cardiac inhibition is proved by this experiment (section of vagi or their paralysis by means of atropine) to be of central origin and due to the excitation of the cardio-inhibitory centre in the medulla oblongata by the extract. The moment the centre is cut off by section of the vagi, the accelerator influences, which are also put in action by the drug, take on their full activity. These influences act directly upon the heart itself. According to Neujean (1904) the action is also a central one; but, if so, it is completely obscured by the central cardio-inhibitory effect unless the vagi be first divided. The acceleration is very evident when the cord is cut and when all nervous connexions between the heart and the central nervous system are severed. It is never better exhibited than in the separated heart of the mammal fed through the coronary arteries with Ringer's solution, to which a minute amount of suprarenal extract or of its active principle has been added. It should, however, be stated that this particular form of demonstration of the fact under consideration was not possible at the time with which we are dealing, since the method of perfusion of the mammalian heart through the coronary arteries, which we owe to Langendorff, was not then accessible to us. Sometimes the inhibitory action is deferred, the accelerator influence being so strong as to eliminate it altogether for the time being. But after two or three minutes the inhibition may suddenly show itself and prevail for some time over the accelerator effect.

The result of the action of adrenin upon the heart is well shown if the contractions of the auricles and ventricles are separately recorded. It is then seen that the active substance acts mainly, so far as the inhibition is concerned, upon the auricles, which, when the action upon the inhibitory centre is powerful, may altogether cease for a time to beat, the ventricles continuing alone with an altered, slower, and

[1] Lecture I. was published in THE LANCET of May 30th, 1908, p. 1531.

somewhat irregular rhythm. Accelerator and augmentor effects, which are precisely similar to those which are obtained by electrical excitation of the sympathetic branches proceeding to the cardiac plexuses, are, on the other hand, produced upon both auricle and ventricle, each showing a striking increase in rate and force of beat. The effects obtained with the isolated frog ventricle fed by Ringer's solution were less striking than those got in mammals. There was only slight acceleration, but the beat, if weak, was strengthened, and if irregular became regular; and with larger dosage the systole was prolonged and the diastole reduced in amount, so that the heart remained almost completely contracted.

One of the first points we set ourselves to determine was the question whether the vaso-constriction which is so pronounced a feature of the action of the extracts is of central or of peripheral origin. This we investigated in two ways. First, we destroyed in the frog the whole of the central nervous system and having suspended the animal with the toes dependent we perfused Ringer's solution through the blood-vessels by means of a cannula tied into the aorta. The amount of fluid per minute flowing through the vessels and dripping from the toes was measured, and a small amount of suprarenal extract was then added to the fluid used for perfusion. We found that the addition of a little more than a trace of the extract produced so great a constriction of the arterioles that the flow of fluid nearly ceased. It was therefore clear that the constriction produced is independent of the central nervous system, and is probably of peripheral origin. Later, in the mammal, we adopted a somewhat different procedure. Having ascertained that section of the cord in the cervical region, whereby the vaso-motor centre in the medulla oblongata was cut off from the subordinate spinal centres, had no effect in abolishing the action of the extract upon the blood-vessels nor the raising of the blood pressure, we proceeded to try whether section of all the nerves passing to a limb would have any influence on its action upon the limb vessels. To test this we inserted both fore-limbs of a dog in plethysmographs, which were constructed like the original instrument employed by Mosso for the human arm, of glass cylinders; these communicated with recording tambours or piston recorders by rubber tubes filled with air. Under these circumstances, anything which would tend to constrict or dilate the arteries of the limb would produce a fall or rise, as the case might be, of the lever of the registering tambour. A blood-pressure curve was taken simultaneously in the same animal. To obviate the possible effects of muscular movements a small dose of curare was given, morphine being employed as an anæsthetic.

A first injection of saline extract of suprarenal produced the characteristic rise of blood pressure but not to an excessive degree. The register of both fore-limbs shows marked contraction; evidently the arterioles in both are undergoing constriction. This is not uniformly the case with the limb vessels, for they contract less readily than the vessels of the splanchnic area, and when the constriction of the latter is very marked the rise of blood pressure produced may even cause passive dilatation of the limb. The whole of the brachial plexus of the right fore-limb was now cut and the injection was repeated. The second curves under these altered conditions are so nearly identical with the first that unless they had been marked it would have been impossible to say which was the one taken before and which after section of the plexus. This experiment eliminates not only possible effects upon the centres for the blood-vessels in the medulla oblongata and spinal cord, but also any effects which might be caused by stimulation of sympathetic ganglion cells, for there are no known ganglia within the limbs. The inference, therefore, was obvious that the vaso-constrictor action is peripheral, and must be produced either upon the nerve fibres or upon their end mechanism, or upon the muscular tissue of the blood-vessels. Certain considerations led us to conclude that the effect was probably a direct one upon the muscular fibres, and although this conjecture was not at the time supported by convincing evidence it has since proved, as the result of experiments by others on the effect of the extract after section and degeneration of all nerve fibres, to be correct. This is a point to which I shall again have to return. Upon the respiration we found that the gland extracts had little immediate action, causing the rhythm to become at first more rapid and the depth shallower. These effects we found to pass off as the circulatory disturbance disappeared.

In the following winter (1894–95), Dr. Oliver being again set free from the cares of practice by the close of the Harrogate season, we resumed our joint investigation and extended it to other animals and to suprarenal glands obtained from various sources. These included the suprarenals from two cases of advanced Addison's disease which we found yielded no active principle at all. We determined that, although after each dose the effects are found to pass off within five or six minutes, if a saline solution containing suprarenal extract be allowed to pass slowly but continuously into a vein, the physiological effects which have been described, and especially the vaso-constriction and cardiac acceleration, are maintained during the whole period of flow. This has been confirmed by Crile and also by Kretschmer (1907). We investigated the effect upon other organs of the body than those previously tried and showed that both the spleen and kidney undergo a marked contraction under the influence of the extract; in the case of the latter organ with diminution of flow of urine. This is the more interesting because pituitary extract, which also produces well-marked contraction of blood-vessels and in some other respects similar physiological results to those caused by suprarenal extract, has an opposite effect upon the kidney vessels and urine, producing a dilatation of the renal arterioles and a free flow of urine. We also attempted to determine whether the extract has any effect on other glands and selected for this purpose the submaxillary of the dog. Having in one or two experiments, undertaken with this object, failed to obtain a flow of saliva as the result of administration of the extract we somewhat too hastily concluded that it had no effect upon these organs. Langley, however (1901), working with the cat, found that the extract produces from all the glands a flow of saliva similar to that which is yielded by stimulation of the cervical sympathetic. Our failure to observe this furnishes a lesson of the desirability of multiplying physiological experiments and of not restricting such observations to animals of one species. Had we been less easily satisfied with accepting our first negative results, which may have been due to an excess of the morphine which we used as an anæsthetic, we should not have missed so important an observation.

In the course of the previous investigations we had found that the extract not only produces a contraction or increase of tone in vascular and cardiac muscle but that frogs which had received a subcutaneous dose show an increased power of contraction of the skeletal muscles on stimulation of their nerves. In the further investigation (1894–95) we extended this observation to mammalian muscle and we further showed that this effect upon muscle lasts for some time after the effects upon the vascular system have disappeared. We therefore came to the conclusion that the active substance is probably taken up by, and remains for a time stored within, muscle and that this may in a measure account for its disappearance from the blood. For we at the same time determined that it is not excreted by the urine, nor is it at once reabsorbed by the capsules. In any case its ultimate disappearance is probably due to a process of oxidation occurring within the tissues. We showed that such oxidation does not occur in the blood, for a portion of the extract left in contact with arterial blood for 22 hours was just as active as a similar portion kept in saline solution. Kretschmer (1907) nevertheless believes that the disappearance of the effect is connected with the alkalinity of the blood, for he finds that if this is diminished by the administration of acids the effect of suprarenal upon the blood pressure is prolonged. According to Miller (1907) the active substance does not disappear from the blood. He states that the blood of a rabbit which has received a dose of adrenin will cause the typical rise of blood pressure if injected into another rabbit, although the effects upon the first animal may have disappeared. Finally, we proved that the extracts of the cortex of the gland are quite inactive, the active principle being confined strictly to the medulla. The principle is, in fact, now known to be identical or, at any rate, closely associated with the chromogenic substance obtained by Vulpian, which is contained in the chromophil or chromaffin cells of Stilling and Kohn.

During this same period (1894–95) and unaware of our experiments and observations of the previous winter, which were published in the *Journal of Physiology* in the spring of 1894 (the full communication appearing in the same journal in 1895), two Polish physiologists, Dr. Szymonowicz and Professor Cybulski of Cracow, were engaged upon a similar research. Their results were published as preliminary communications to the Academy of Sciences of Cracow in

February and March, 1895, and in full by Dr. Szymonowicz in *Pflüger's Archiv* in 1896. They observed many of the phenomena which we had described and brought independent corroboration of many of our observations. But in some minor details and in one important point they obtained different results. They were led to conclude that the extract produces its vaso-constrictor effects, not peripherally but centrally, upon the centres in the medulla oblongata, not upon the blood-vessels themselves. This was, as we have seen, obviously a mistaken conclusion, and it is difficult to understand how so experienced a physiologist as Professor Cybulski can have arrived at it. In most other points their results were corroborative of ours. They, however, referred the symptoms of Addison's disease partly to implication of sympathetic nerves and ganglia, partly to absence of the effects which, in conformity with the conclusions they had arrived at, are produced upon the nerve centres. To the Polish scientists must none the less be accorded the credit of having independently arrived at the establishment of the principle that the suprarenal glands are organs which yield an active internal secretion.

RECENT RESEARCHES.

This was the condition of our knowledge of the subject in the spring of 1895. From this time onwards researches multiplied and many other interesting facts regarding the action of the extract were determined. One of these which has come to be of practical importance in medicine, and especially in surgery, was the proof of the direct local action of the extract. This was determined by Dr. Oliver (1897) who placed a fragment of dry medulla of a suprarenal capsule upon a small artery in the mesentery of a frog which was spread out under the microscope for the observation of the circulation. As the active material dissolved and penetrated to the walls of the vessel this showed a local contraction which became eventually so marked that the blood ceased to be driven through that particular artery. This suggested its applicability as a styptic and we came in the habit of employing it to check bleeding from wounds made in the course of vivisection experiments; its application to surgical needs of this description is now universal. Especially is it employed as an adjuvant to the subcutaneous injection of cocaine and similar local anæsthetics, the action of which it assists by diminishing blood flow and absorption in the part to be anæsthetised. In epistaxis I myself early had an opportunity of verifying its styptic character. And Dr. Oliver found that a congested and inflamed conjunctiva is at once rendered pallid under its influence. Similar but independent observations were made by W. H. Bates (1896), who published in the *New York Medical Journal* the result of its use in diseases of the eye. One of the most striking facts relative to this styptic action is that, although when given by the mouth, no evident change occurs in the blood pressure, there is very distinct evidence of vascular constriction, for bleeding from internal parts, such as the stomach, intestine, bladder, and uterus, even the bleeding of post-partum hæmorrhage, may thereby be effectually controlled. The explanation of this which most readily presents itself is that injured vessels are more susceptible to the extract and react to a slight excess of it in the blood more readily than do normal vessels. This is somewhat analogous to what is found after section and degeneration of the sympathetic nerve fibres to a part, in which case the reaction is also greatly intensified.

An enumeration of the various uses of the extract in clinical medicine and surgery has been given recently by J. L. Miller in the *Journal of the American Medical Association* for May, 1907. Amongst these he includes its employment, as a topical application to mucous membranes, especially the nose and throat, and internally in a variety of different conditions, especially cardiac insufficiency, as in diphtheria—in which, as Elliott and Tuckett (1906) have shown, there is a deficiency of chromogen in the medulla—internal hæmorrhage, bronchial asthma, and the treatment of various transudates in the body cavities. Its use is indicated in cases where there are marked vaso-dilatation and insufficiency of cardiac action. Such conditions may be produced experimentally by chloral and some other anæsthetic drugs, and are present in the final stages of asphyxia. They also occur in shock. Gottlieb found that if the heart of a rabbit is brought to a standstill by chloral it may be revived by suprarenal extract, which is superior in its action to digitalis. Crile has shown its value in surgical shock, Miles and Muhlberg in vaso-motor failure from excess of ether; but in heart standstill from chloroform poisoning Dr. Herbert J. Scharlieb and I found it was impossible to revive permanently the cardiac muscle by adrenin. In conjunction with Dr. Herring I experienced a similar failure in asphyxia (from drowning) after both heart and respiration had ceased; although the heart may by its injection into the cardiac substance be stimulated to resume its action for a short time, the effect is not permanent. When the heart muscle is affected by disease, its value as a cardiac and vaso-motor stimulant is dubious, for it may throw too great a strain upon the weakened cardiac tissue. Thus, Gottlieb found that in a rabbit poisoned by repeated doses of diphtheria toxin, intravenous injections of adrenalin, although for a very short time apparently beneficial, were soon followed by still greater collapse and death. But probably administration by the mouth or subcutaneously, having a slower effect, might be beneficial in such cases. Kaplan and Miller both report satisfactory results from its use in bronchial asthma; it, however, only gives temporary relief and is in no sense curative. It is not known how the beneficial effect is produced; it is possibly due to inhibition of the bronchial musculature. Barr (1903) found that the fluid of pleurisy and other serous accumulations in the body cavities did not reaccumulate after evacuation and introduction of adrenalin.

In Addison's disease the employment of suprarenal extract has been found beneficial but not curative. This is scarcely to be wondered at when we consider that the primary cause of the disease is usually tuberculous or malignant affection of the capsules. The effect in diminishing the weakness and sense of lassitude is very marked in certain cases. In one of those reported by Langlois, in which prior to taking the extract the ergographic curve of the patient showed extreme muscular weakness and rapid fatigue, after a six weeks' course of the extract, the curve became as well marked and prolonged as that of a normal individual. In a few instances a cure has been reported, but this may occur without the use of the extract, and such cures of the diseases are probably due to functional suppression of the secretions and not to organic disease of the gland. O. Grünbaum (1907) states that suprarenal extract, although when administered by the mouth it ordinarily fails to show elevation of blood pressure, will produce this effect in cases of Addison's disease. Bossi (1907) reports great improvement in osteomalacia in pregnant women as the result of subcutaneous injections of the extract, but further experience is needed to confirm these observations. I need, however, not further dwell upon the clinical applications of suprarenal extract, which have, moreover, recently received adequate treatment from Rolleston in his address last year before the Canadian Medical Association. This would be occupying your time most unnecessarily, seeing that there is probably no one present in this room who is not better informed upon this subject than myself. It will be more profitable if I turn to the consideration of the data which have been added to our knowledge of the physiological action of the extract since the discovery of its best-marked effects.

The most important of these additional data were those contributed by Lewandowsky (1899), who found that the intravenous injection produces dilatation of the pupil, withdrawal of the membrana nictitans, protrusion of the globe, opening of the palpebral fissure, excitation of arrectores pili, and inhibition of the bladder. Boruttau (1899) showed that it causes inhibition of intestinal movements. All these results are also produced by sympathetic excitation. But that the effects are not the results of excitation of the sympathetic nerve fibres is clear from the fact, also discovered by Lewandowsky, that the results are equally well obtained after these fibres are cut and allowed to degenerate. Langley (1901–02) added to the list of sympathetic innervated parts excited by this substance the salivary and lacrymal glands, the liver, the muscular tissue of the uterus and vagina, of the vas deferens, and vesiculæ seminales, the dartos and the muscular coat of the stomach; in the last-named organ inhibition of the muscular movements is produced. On the other hand, the sweat glands are not excited to secrete, nor the pancreas, and the relative amount of effect produced is not the same as that caused by electrical stimulation of the sympathetic nerves to the part. Apocodeine abolishes the effects produced by sympathetic excitation and was found by Dixon to abolish those produced by adrenalin. He therefore concluded that this acts upon the endings of the sympathetic. But, as we have seen, Lewandowsky had shown that the effects are got after section

and degeneration of the sympathetic fibres. Langendorff (1900), confirming older observations by Budge and others, found that the effect of agencies which produce pupil dilatation is enhanced after removal of the inferior cervical ganglion ("paradoxical effect"). Dr. and Miss Meltzer (1903) showed that this paradoxical effect is marked in the case of suprarenal extract; that after removal of the superior cervical ganglion the effect of intravenous injection, instead of disappearing within about a minute, becomes prolonged, and that subcutaneous injection and conjunctival application, which normally are without effect, now produce marked pupil dilatation. This observation was confirmed by Elliott (1904–05), who insisted upon the fact that the excitation must be due to some substance within the muscle fibres being affected by the extract, and suggested that this substance is present at the "myoneural junction," where it is originally formed under the influence of the sympathetic fibres. By an extension of this idea we can suppose that the formation being once started, its amount is also controlled by the sympathetic, and if this control be cut off an inordinate quantity may accumulate, thus increasing the excitability of the isolated muscle fibres. That the presence of nerve fibres is essential to the original appearance of such hypothetical excitable substance was shown by the observations of Macfie (1905), who found that the extract has no effect upon the movements of the protoplasm of amœboid cells or cilia nor upon the heart of the chick before the ingrowth of nerve fibres into it, although after such ingrowth the effect is most striking. Langley (1903–07) believes that the excitable substance which Elliott supposed to be confined to the myoneural junction is diffused through the protoplasm of the cell of which it has come to form an integral part. He proposes for the hypothetical material which thus reacts not only to adrenalin but in various ways to different drugs the name "receptive substance," and regards the differences of effect which he has determined in different sympathetic innervated organs as due to the relative amount of this substance in the cells. That there is some apparatus or material developed within cells originally under the influence of sympathetic nerves which is specially excited by adrenalin and by drugs of similar chemical character there can be no doubt, but whether it is limited to the region of the original nerve terminals or is diffused through the protoplasm is a point difficult of determination. It is not unlikely that experiments upon skeletal muscle, the excitability of which by various drugs is also affected by section of the nerves to the muscle, may throw light upon this question, which is one of great theoretical importance in connexion not only with the physiology of internal secretion but also with the action of drugs upon the muscular and glandular systems.

Another interesting datum which has been added to our knowledge of suprarenal extract is the observation that subcutaneous injection of adrenalin, even in relatively small doses (0·5 milligramme per kilogramme), produces marked glycosuria in both rabbits and dogs; the effect begins within one hour, and may last after a single dose for 24 hours or more. This was first noticed by Blum (1901), and the subject has since been followed up by various investigators, among whom may be enumerated Zuelzer (1901), Metzgar (1902), Herter (1902), Noël Paton (1903), and Lazarus (1907). The last observer states that after prolonged treatment with adrenalin there is marked hypertrophy of the islets of Langerhans of the pancreas, as well as of the suprarenals. There is, however, so much variation in the apparent amount of the islet tissue, even in the normal pancreas, that statements of this kind must be received with caution. Herter and Richards and also Paton showed that, as with phloridzin and pancreatic diabetes, glycosuria occurs even when stored carbohydrates have been previously eliminated. There undoubtedly seem to be connecting links between the glycosuria set up by pancreatic removal and that due to the action of suprarenal extract. Herter and Wakeman (1903) found that quite small amounts (1 cubic centimetre of a 1 in 1000 solution) of adrenalin applied to the pancreas provoke marked glycosuria. Intraperitoneal injection is more efficacious than subcutaneous. The amount of sugar in the blood is largely increased by the injection, while it is found to fall considerably on extirpation of the glands or ligature of the vessels. After such ligature removal of the pancreas may not produce glycosuria. Löwe (1907) found that in pancreas diabetes adrenalin readily produces pupil dilatation if dropped into the conjunctiva, whereas in the normal individual no such reaction is obtained. This observation was confirmed by Biedl and Offer (1907), and may serve as a diagnostic sign for this form of diabetes. Biedl (1898) had found that diabetes is produced by tying the thoracic duct, and even more effectually by leading it to the exterior and allowing the lymph to flow away, the amount of sugar appearing in the urine, even on a diet free from carbohydrate, being from 1 to more than 5 per cent. Biedl and Offer find that in this form of diabetes the pupil reacts readily to adrenalin dropped on the conjunctiva. They further find that admixture with lymph or simultaneous injection of lymph from another animal prevents adrenalin diabetes. The mydriatic effect is also said by them to be prevented by admixture with lymph, which, further, may be protein-free. Lépine (1890) had already noticed that in a dog with pancreas diabetes the injection of lymph from a normal animal produces marked temporary diminution of sugar in the urine. The idea which suggests itself is that the lymph normally contains a chemical (glycolytic) substance derived from the islets of the pancreas, which is essential to the due maintenance of normal carbohydrate metabolism.

We have seen that the most marked and probably the most important effect of suprarenal secretion in the body is to increase the contraction and maintain the tone of the blood-vessels. But the extract does not act equally upon all arteries. Its effect is perhaps greatest upon those of the splanchnic area; it is certainly less upon the arteries of the limbs, which may even be passively expanded in consequence of the great rise of pressure produced by contraction of the arterioles of the splanchnic area, this rise of pressure being assisted by the accompanying augmentation and acceleration of the heart. For the same reason the larger arteries, especially the aorta and its immediate branches, may stretch almost to rupture. Nevertheless, transverse strips of the muscular coat of the blood-vessels immersed in Ringer's solution containing suprarenal extract contract strongly, as do isolated sections of the vessels connected with a manometer and immersed in suprarenal extract. Some vessels, however, show much less contraction than others. Brodie and Dixon (1906) were unable to obtain evidence of constriction of the pulmonary vessels on injection of suprarenal; it is also difficult to show any effect upon them on excitation of the sympathetic. It is true that Bradford and Dean (1894) thought they could demonstrate a slight independent effect on the pulmonary arterioles on stimulation of the cord, but the method they adopted is open to criticism. Plumier (1907) repeated Brodie and Dixon's experiment and using stronger doses of adrenalin succeeded in getting a positive result. It is, however, clear that the action is far less than upon the systemic vessels. It has therefore been judged dangerous to administer adrenin—even by the mouth—in pulmonary hæmorrhage, because it is supposed to raise the systemic blood pressure without constricting the pulmonary vessels and thereby to increase the tendency to hæmoptysis. But administration by the mouth does not perceptibly raise the systemic blood pressure and nevertheless there is considerable clinical evidence that internal hæmorrhages, when not too profuse nor coming from large vessels, may be brought under control by its oral administration. I have already suggested that it may have a greater effect upon injured vessels, and this may also be true for small ruptured pulmonary vessels. For my own part, I see no physiological contra-indication for its use in assisting to arrest hæmoptysis—when the bleeding is derived from rupture of small vessels. And certainly the bronchial vessels should be quite amenable to its action, whatever opinion may be held about the pulmonary arterioles. On the cerebral vessels also, although various observers at first failed to obtain evidence of contraction, it has now been shown by Wiggens (1905) by the perfusion method that the extract may produce a vaso-constrictor effect, although to a less degree than with ordinary arteries. Whether it can be used beneficially in threatening cerebral hæmorrhage is a question for clinical experience to decide, but as with the analogous case of pulmonary hæmorrhage there is no physiological contra-indication if administered by the mouth.

There remains for consideration the coronary circulation. Are the coronary vessels constricted by suprarenal extract, or are they dilated, or is there no specific action? Nothing is definitely known regarding the innervation of these vessels. Roy and Adami (1892) thought they had some evidence that the vagi may produce vaso-constrictor and the sympathetic vaso-dilator effects on them. But they did not employ the perfusion method to determine the point and

their evidence must be regarded as inconclusive. It has, indeed, been generally held that the coronary arteries are little, if at all, controlled by vaso-motors. Recently (1906) I myself endeavoured to solve this question with the aid of the perfusion method. For this purpose I collected and recorded by a specially-devised apparatus the amount of Ringer's solution passing through the coronary vessels per minute in the isolated mammalian heart and observed the effects upon the flow of stimulating the vagus and sympathetic nerves passing to the heart. The results I obtained did not justify the inference that there exist active vaso-motor fibres, although I obtained during the cardiac acceleration, which was produced by stimulation of the sympathetic and still more during that produced by suprarenal, an increased flow of blood through the coronary vessels. This might, however, quite well be accounted for by increase in activity of the cardiac muscle, which would mechanically facilitate the flow through the coronary vessels. Langendorff (1907) has lately adopted another method for determining this question—namely, that of immersing strips of the vascular wall attached to a lever in adrenalin solution. He states that whereas strips from other arteries so tested contract when adrenalin is brought in contact with them, a strip from a coronary artery will become relaxed, and he infers from this that suprarenal extract produces inhibition and therefore vaso-dilatation. If this is so the action is different from that produced on all other vessels. Such a result would perhaps not be surprising, seeing that a rapidly and strongly contracting heart must necessarily pass more blood through its vessels than one beating slowly and less strongly, and suprarenal extract produces rapid and strong contractions. The subject is one which requires further examination, and, in fact, has been again studied in my laboratory by the method employed by Langendorff. Although not at the present moment prepared to make a definite pronouncement upon the question in all its aspects, I can, at any rate, state that we have never yet succeeded in obtaining the dilatation of a transverse strip of coronary artery (such as is represented by Langendorff) when pure suprarenal extract or adrenin unmixed with any other drug is added to the oxygenated Ringer solution, in which the strip of artery is immersed. It is, perhaps, possible that the contrary result obtained by Langendorff may have been due to the presence of some other substance than adrenin in the solution used by him. A pathological effect which has been noticed (Josué, 1903) as the result of repeated injections of adrenin into the auricular vein of the rabbit is a degenerated condition of the wall of the larger arteries, especially of the aorta (arterio-sclerosis). This effect is not peculiar to adrenin but is produced by other blood pressure-raising substances, such as digitalin and nicotine. The effect is seen also, according to Toropoff (1908), in the pulmonary artery. An account of these changes was given by Dr. H. Batty Shaw in his Goulstonian lectures in 1906, so that it is unnecessary for me to dwell further upon them.

CONCLUSION.

All this leaves our knowledge of the action of the *cortex* of the capsules very much in the position which it occupied 40 years ago—indeed, one may even say in the position it occupied in the time of Montesquieu. It is certain that we cannot as yet allocate any definite function to the cortical cells. Nevertheless, we cannot doubt that they possess a function, and an important one. Of the two parts of the gland, the cortical is the most constant in the vertebrate sub-kingdom. It is relatively best developed in late fœtal and in early extra-uterine life when growth and differentiation are proceeding rapidly; it is present during the whole of life, and there is no evidence that it undergoes any atrophic changes with age. It is impossible even to say that it is functionally related to the medulla, although its close topographical connexions with that structure in most animals —and the closer the higher we proceed in the scale of organisation—seem to betoken some functional nexus. A relationship to the development of the generative organs has been suggested on the ground that in cases of precocious sexuality the suprarenal capsules—presumably the cortex—have been found hypertrophied (Wooley, 1902; Bulloch and Sequeira, 1905). A resemblance between the cells of the cortex and those of the corpus luteum of the ovary has been frequently pointed out, but this may be merely superficial. It has been recently more particularly insisted upon by Kinlon (1906). It has also been suggested that the suprarenal cortex has antidotal properties for certain poisons, such as snake venom (Myers, 1907).

Biedl states that he has been able to remove the cortex, leaving the medulla intact, and that the operation was followed by the death of the animals; but I think the experience of most people would lead them to believe such a separation to be impossible. And, as I have already stated, Vincent did not find removal of the inter-renal body in the eel—which undoubtedly represents in that animal the cortex of the mammalian organ—to be fatal. That the cortical cells are internally secreting structures is pointed to by their epithelium-like appearance and the richness of the arterial blood-supply of this part of the organ. Ciaccio (1906) has described in the cells what he regards as evidences of secretory activity, such as are met with in the cells of ordinary secreting glands. But even without direct evidence it is difficult not to believe that the cortical cells produce an internal secretion, which is either taken up by the blood or is otherwise conveyed away from the cell columns. It is open to us to suppose that these may initiate the preparation of the internal secretion (adrenin) of the medulla, or that they may prepare an enzyme which completes the formation of that substance. The experiments of Abelous, Soulié, and Tougan (1905) are confirmatory of this suggestion but do not carry conviction. On the other hand, there are both anatomical and pathological reasons for believing that the internal secretion of the cortex is independent of that of the medulla and produces quite different effects in the organism.

According to Della Vida (1904) cytotoxic serums prepared from the two parts of the gland are only toxic for their respective parts. That the suprarenals are related in some way to metabolic changes in the tissues and organs there can be little doubt. This is indicated by the symptoms of Addison's disease. Some of these symptoms can be referred to the absence of medullary secretion. But others, such as the extreme wasting (when not due to general tuberculosis) and the malnutrition which is expressed in the abnormal pigmentation of the skin and mucous membrane, are not readily referred to the medulla, and are probably the result of disease of the cortex. In assuming that the cortex of the organ subserves through its internal secretion certain functions connected with metabolism we have an analogy with what is known regarding the pituitary body. In this, again, we find an instance of a small ductless gland, partly epithelio-nervous, and partly purely epithelial in structure and origin, the two parts having different functions, although bound up together into a single organ. Of the two parts, the nervous part, as in the suprarenals, produces a substance or substances such as it is now customary to term "hormones," which influence the circulatory organs and certain externally secreting glands—in the case of the suprarenals it is salivary glands, in the case of the pituitary it is the kidneys which are especially stimulated to secretion. The purely epithelial part of the pituitary, on the other hand, is closely connected with the growth and nutrition of certain of the connective tissues and especially of the bones, hyperplasia of the organ being accompanied by symptoms of gigantism and acromegaly. It seems, therefore, that from analogy we have some justification for inferring that the cortex of the suprarenals may yield a hormone which influences the growth and nutrition of certain tissues and organs. One might even be permitted to suggest that the integumentary tissues and the generative organs—with the relative development of which it is manifestly correlated—are directly under its influence. But I am getting away from the subject of my lectures and substituting for what is known regarding the functions of the suprarenals what is only conjectural. The digression is fascinating, but time will not allow me to pursue it. Perhaps within the next few years a successor of mine in this lectureship will be able to put before you as much positive knowledge regarding the cortex as we now possess regarding the medulla, the function of which seemed, no more than 15 years ago, as obscure as that of the cortex appears at present. And with the hope that this obscurity may speedily be removed, I cannot do better than terminate my discourse.

THE DRAINAGE OF DAWLISH (DEVON).—At a meeting of the Dawlish urban district council held on May 21st a scheme was adopted for modernising the whole of the drainage of the town. The cost of the undertaking is estimated at about £4000.

ON THE PREPARATION AND USE OF ANTIRABIC SERUM,

AND ON THE RABICIDAL PROPERTIES OF THE SERUM OF PATIENTS AFTER UNDERGOING ANTIRABIC TREATMENT; ALSO A NOTE ON THE BLOOD OF A PATIENT SUFFERING FROM HYDROPHOBIA.[1]

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I.—ON THE PREPARATION AND USE OF ANTIRABIC SERUM.

THE idea of utilising the blood of an animal immunised with rabies virus to protect other animals against the disease was first put forward by Babes and Lepp in 1889. A few years later (1891) Babes and Carchez, experimenting with dogs, demonstrated that the blood of these animals when highly immunised was capable of protecting other dogs against the experimental inoculation of rabies, and in those not protected the incubation period was prolonged. They also proved that immune blood was capable of destroying rabies virus *in vitro*. It appears that Babes used the immune blood of man and dogs to treat some 12 cases severely bitten about the head by a rabid wolf. Of the 12 persons treated in this way there was one death. In severe cases he advocated mixed treatment—that is, the injection of immune serum in addition to Pasteur's treatment. Tizzoni and his fellow workers prepared an antirabic serum by immunising sheep with fixed virus attenuated by treatment with gastric juice. For this serum they claimed both prophylactic and curative properties and recommended its use in persons severely bitten about the head and face or in those coming late for treatment. Marie came to the conclusion that a prolonged period of vaccination in mammals was required in order to produce an active serum. Notwithstanding the experimental evidence produced by Babes, Tizzoni, and others in favour of antirabic serum, the subject has not attracted much attention and the use of the serum in antirabic institutes has, practically speaking, gained no headway, Pasteur's method of treatment being still universally employed.

Although the causal agent of rabies has not yet been discovered, the majority of the facts which we do know in connexion with the virus point to the probabilities of its being a germ and not a toxin; we are therefore more likely to be right in assuming that the serum of an immune animal is antimicrobic rather than antitoxic. Should this assumption turn out to be correct we are not likely to derive more than a limited benefit from any antirabic serum, no matter how highly the animal supplying it has been immunised. On the other hand, as pointed out by Babes and Tizzoni, its uses may lie in the direction of enabling us to grapple more successfully with the treatment of severely bitten and late cases when given as an adjunct to the ordinary method of treatment.

With this object in view, when director of the Pasteur Institute of India, I prepared a serum in 1902–03–04, and after satisfying myself that it possessed marked rabicidal properties when mixed with fixed virus I decided to use it as a preliminary to the usual method of treatment in severely bitten and late cases where there was good evidence to believe that the animals which inflicted the bites suffered from rabies. In these cases my object was to confer as high a degree of immunity as I possibly could, and within the shortest period of time. An active immunity such as is acquired by a patient who undergoes the ordinary method of antirabic treatment takes some time to become established, but a passive immunity such as is conferred by using the serum of an animal highly immunised can be acquired very quickly. In the former case the duration of immunity is long compared with the latter, a passive immunity being easily acquired and soon got rid of again. It is thus possible to give badly bitten and late cases the benefits of a passive immunity, pending the acquirement of a more durable active immunity resulting from the inoculation of rabies virus.

Young healthy ponies were the animals used in the preparation of the serum. Their immunity was accomplished by inoculating them first of all with attenuated fixed virus, commencing with the 14-day dried cord of a rabbit, and continuing the treatment daily by going down the series of attenuated cords until a 3-day cord was given. After this an 8-day cord was given, and the series again gone down by giving a larger dose every second day until a fresh cord was reached. The treatment was then put back to a 4-day cord and doses of increasing strength given every fourth day until a fresh cord was again reached. Immunisation was now continued by giving increasing doses of fresh fixed virus at intervals of from 10 to 15 days until the amount of virus represented by the fresh brains and medullæ of two rabbits of the series used to keep up rabies vaccine for the institute was given. This took about eight months to accomplish. Immunity was then kept up by repeating these large doses every four or five weeks. Blood was never drawn off sooner than 14 days after one of these large doses, more often 18 to 21 days after.

The serum when tested by mixing with fixed virus was found to have the property of rapidly destroying its virulence and rendering it harmless to rabbits when inoculated

TABLE I.—*Experiments to illustrate the Rabicidal Effect on Fixed Virus of the Serum of a Pony Highly Immunised against Rabies.*

No. of experiment.	Date of experiment.	Age of serum.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact.	Quantity inoculated.	Animal inoculated.	Method of inoculation.	Results.
	1903.							
1	June 23rd.	24 hours.	Serum 1 vol. Virus 2 vols. 5% emulsion.	10 minutes at room temperature, about 20° C.	0·2 c.c.	Rabbit full grown.	Subdural.	Alive and well Sept. 1st.
2	Nov. 6th.	,,	,,	,,	,,	,,	,,	Alive and well three months after experiment.
3	,,	,,	,,	,,	,,	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	,,
5	,,	,,	Serum 1 vol. Virus 3 vols. 5% emulsion.	,,	,,	,,	,,	,,
6	,,	,,	Serum 1 vol. Virus 7 vols. 5% emulsion.	,,	,,	,,	,,	Developed rabies on the ninth day.
7*	,,	,,	Normal horse. Serum 1 vol. Virus 1 vol. 5% emulsion.	,,	,,	,,	,,	Developed rabies on the seventh day.
8*	,,	,,	,,	24 hours at room temperature about 20° C.	,,	,,	,,	,,

* Control.

Remarks.—From the control Experiments 7 and 8 it will be seen that normal horse serum is devoid of rabicidal properties when mixed *in vitro* with an equal volume of fixed rabies.

[1] The experiments detailed in this paper were carried out by me at the Pasteur Institute of India, Kasauli, during the years 1903–04–05, when I was director of that institute.

subdurally. When given hypodermically and in large doses to dogs and rabbits, before and after the subdural inoculation of fresh fixed virus, it had no appreciable effect in warding off the subsequent onset of rabies in these animals. This, however, is a very severe test and probably more than we can ever expect any antirabic serum to combat successfully, owing to the fact of the virus being directly implanted on to its specific germinating ground, the central nervous system; but it does not follow from this that it would fail in preventing or retarding the onset of rabies when infection took place by the bites of rabid animals.

The experiments detailed in Tables I. and II. make clear the above statements as to its rabicidal powers *in vitro* and its failure to prevent rabies when given hypodermically before and after the subdural inoculation of fresh fixed virus. In Table I. it will be seen that 1 volume of serum destroyed the virus in 3 volumes of a 5 per cent. emulsion of fresh fixed virus, but when the proportion of the virus was increased to 7 volumes the incubation period was only prolonged two days. In Table II. it will be seen that an equally potent serum failed to protect dogs when the virus was given subdurally and the serum hypodermically, although the doses of serum were large for animals weighing only about 12 pounds—viz., 20 cubic centimetres for four days before and two days after the subdural inoculation of fresh fixed virus.

TABLE II.—*To Test whether Antirabic Serum has any Effect in Preventing the Onset of Rabies when the Serum is given Hypodermically and the Virus Subdurally.*

1903.

Experiment 1.

Dog, medium size (about 6 kilogrammes).
July 16th, 20 c.c. serum hypodermically.
" 17th " " "
" 19th " " "
" 20th " " "
" " Inoculated subdurally with fixed virus.
" 21st. 20 c.c. serum hypodermically.
" 23rd " " "
" 30th. Commencing rabies *tenth day*.
August 3rd. Died from rabies.

Experiment 2.

Dog, medium size (about 6 kilogrammes).
Treated exactly as Experiment 1 and on the same dates.
August 2nd. Commencing rabies *twelfth day*.
" 8th. Died from rabies.

Experiment 3 (control).

Dog, medium size (about 6 kilogrammes).
Not given any serum.
July 20th. Inoculated subdurally with fixed virus.
" 29th. Commencing rabies *ninth day*.
August 1st. Died from rabies.

Experiments 1 and 2 go to prove that antirabic serum given hypodermically before and after the subdural inoculation of fixed virus in dogs has no appreciable effect in preventing the subsequent onset of rabies. Similar experiments were tried in a series of some eight or ten rabbits and in no instance had the serum any appreciable effect in warding off the onset of rabies when given hypodermically before and after the inoculation of virus subdurally.

In an experiment of this kind the pre-incubation period is done away with, and the virus immediately after being inoculated is on a soil eminently suited for its incubation and growth. I may here explain the meaning which we now attach to the terms *pre-incubation period* and *incubation period* when used in reference to rabies virus. By *pre-incubation period* is meant the time occupied by the virus in reaching the nerve centres from the seat of the infection—i.e., the period during which the virus grows along the nerves from the seat of the bites inflicted by a rabid animal until it reaches the nerve centres, when the true incubation period begins. By *incubation period* is meant the period which elapses between the time the virus comes in contact with the nerve centres and the onset of the first symptoms of the disease. An example may make this plainer. When the virus from a rabid dog (street virus) is inoculated subdurally in a rabbit a period of 14 days as a rule elapses before any symptoms set in. This is the incubation period for *street virus*. When Pasteur's fixed virus is inoculated subdurally in rabbits no symptoms appear until the seventh day. This is the incubation period for fixed virus.

The *pre-incubation period* is a very variable time and depends on several factors, such as individual susceptibility, quantity of virus inoculated, number and extent of the wounds, and whether in close proximity to the nerve centres; also whether few or many nerve fibres or large nerves are infected. These are factors which are bound to vary in every case of a bite by a rabid animal and on this account the pre-incubation period must also vary. We know that the incubation period as defined above is within narrow limits always a fixed time, but when added to a varying pre-incubation period we get a period of time elapsing between the infliction of a bite by a rabid animal and the onset of rabies or hydrophobia which can never be the same in any two cases. There are no symptoms to indicate either of these periods.

The pre-incubation and incubation periods taken together are often referred to as the incubation period for rabies virus, but from theoretical and practical points of view the distinction is of importance, owing to the fact that it is only during the pre-incubation period of the virus that prophylactic treatment can prove successful. Hence the necessity and importance of early treatment.

The seat of election of rabies virus is nerve tissue and the specific germinating ground the central nervous system. Once the virus has commenced to multiply in large nerve trunks as a result of wound infection it is doubtful whether ordinary treatment would be of any avail in preventing the onset of the disease. We know that when the virus is inoculated on the surface of the brain treatment of any kind is useless. On the other hand, we know that when infection takes place by the bite of a rabid animal early treatment by Pasteur's method is almost invariably successful. In a brain infection it is impossible to prevent the disease by early treatment.

An example intermediate between these two extremes would be a wound infection in which treatment had not been commenced until several weeks had elapsed. In a case of this kind we should have to assume that the virus had grown beyond the vicinity of the wound and had infected nerve trunks between the wounds and nerve centres. These are the cases which furnish the highest percentage of failures. Now the question arises, Would serum treatment followed by the ordinary treatment give a higher percentage of success in such cases? In the solution of this problem one of the first points to settle would be whether treatment with antirabic serum alone has any effect in warding off the disease in the case of animals bitten by other rabid animals. Many difficulties come in the way of answering this question satisfactorily, the main difficulties being the uncertainty of the disease supervening in a number of cases even without treatment of any kind and the possibility of a very prolonged pre-incubation period in others. In order to overcome these difficulties observations would have to be made in a large number of infected animals and for an extended period of time, some being treated with serum and the others not. In the absence of some definite basis of this kind one would not feel justified in treating human beings by the serum method only.

In the summer of 1904 I treated two infected animals by antirabic serum only. One, a dog severely bitten on the shoulders and ear by another dog subsequently proved rabid. Four days after being bitten 30 cubic centimetres of serum were injected into the tissues in the vicinity of the bites and the dog remained free from rabies for a year, when it was again bitten by a rabid dog and contracted rabies two months afterwards. No treatment was given after the second bites. The other animal treated was a horse, severely bitten on the hind leg by a rabid dog. 100 cubic centimetres of serum were injected hypodermically on the side of the neck ten days after the bites. Two months afterwards the horse developed rabies. 100 cubic centimetres of serum were probably a small dose for such a large animal.

During the years 1903-04, when director of the Pasteur Institute of India, I treated 202 patients with antirabic serum as a preliminary to the usual method of treatment. These were cases selected either because they were severely bitten or came late for treatment, and where there was good evidence to believe that the animals which inflicted the bites were rabid. In the majority of these cases 10 cubic centimetres of serum were given hypodermically when they presented themselves for treatment, and next day the usual treatment was proceeded with. In some of the cases the serum treatment was repeated on the second day, and the usual treatment proceeded with on the third day.

Of the 202 cases treated in this way three were failures;

TABLE III.—*Experiments to Test the Effects on Fixed Rabies Virus of the Serum of a Patient after Undergoing the Ordinary Course of Antirabic Treatment for 22 Days. Serum and Virus (1 per cent. Emulsion) Mixed in Equal Volumes and Inoculated Subdurally in Healthy Full-grown Rabbits.*

No. of experiment.	Date of experiment.	Time after completion of treatment when serum was tested.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	April 17th.	1 day.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour; 37° C.	0·15 c.c.	April 28th.	11 days.	Incubation period prolonged four days.
2	,, 18th.	2 days.	,,	,,	,,	—	—	Died April 26th. No paralysis before death. A portion of the medulla used to inoculate another rabbit subdurally failed to give it rabies.
3	,, 19th.	3 ,,	,,	,,	,,	—	—	Was apparently quite well on April 26th. Found dead in cage on April 27th. A portion of the medulla inoculated subdurally into another rabbit failed to convey rabies.
3*	,, 28th.	3 ,,	Serum 1 vol. 10 days in ice chest. Virus 1 vol. 1% emulsion.	,,	,,	May 9th.	11 days.	Incubation period prolonged four days.
4	,, 20th.	4 ,,	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	,,	,,	—	—	Alive and well on May 25th, 35 days after the experiment. *Experiment off.*
5	,, 21st.	5 ,,	,,	,,	,,	—	—	Alive and well on May 25th, 34 days after the experiment. *Experiment off.*
6	,, 22nd.	6 ,,	,,	,,	,,	May 2nd.	10 days.	Incubation period prolonged three days.
7	,, 23rd.	7 ,,	,,	,,	,,	,, 3rd.	,,	Incubation period prolonged three days.
8	,, 24th.	8 ,,	,,	,,	,,	,, 6th.	12 days.	Incubation period prolonged five days.
9	,, 25th.	9 ,,	,,	,,	,,	—	—	Apparently quite well on June 2nd, 38 days after the experiment; after this it began to waste. No paralysis. Died June 15th.
10	,, 26th.	10 ,,	,,	,,	,,	—	—	Apparently quite well on June 2nd, 37 days after the experiment: after this it began to waste. No paralysis. Died June 10th.
11	,, 27th.	11 ,,	,,	,,	,,	May 6th.	9 days.	Incubation period prolonged three days.
12	,, 28th.	12 ,,	,,	,,	,,	—	—	Alive and well on June 24th, 57 days after the experiment. *Experiment off.*
13	,, 29th.	13 ,,	,,	,,	,,	—	—	Alive and well June 16th, 48 days after the experiment. Found dead in cage June 17th. No paralysis.
14	,, 30th.	14 ,,	,,	,,	,,	May 11th.	11 days.	Incubation period prolonged four days.
15	May 1st.	15 ,,	,,	,,	,,	—	—	Alive and well June 30th, 60 days after the experiment. *Experiment off.*
16	,, 2nd.	16 ,,	,,	,,	,,	May 11th.	9 days.	Incubation period prolonged two days.
17	,, 3rd.	17 ,,	,,	,,	,,	—	—	Alive and well June 30th, 57 days after the experiment. *Experiment off.*
18	,, 4th.	18 ,,	,,	,,	,,	—	—	Alive and well June 11th, 38 days after the experiment; after this wasting set in. No paralysis. Died June 15th.
19	,, 5th.	19 ,,	,,	,,	,,	May 15th.	10 days.	Incubation period prolonged three days.
20	,, 6th.	20 ,,	,,	,,	,,	June 18th.	43 ,,	Incubation period prolonged 36 days.
21	,, 7th.	21 ,,	,,	,,	,,	—	—	Apparently well on June 11th, 35 days after the experiment. Found dead in cage June 12th.
22	,, 14th.	28 ,,	,,	,,	,,	May 23rd.	9 days.	Incubation period prolonged two days.

* Repeated with serum kept in ice chest since April 18th.

Remarks.—Of these 22 experiments 11 developed rabies. The shortest period of incubation was nine days and the longest 43 days. Average 13·5 days, as compared with seven days, the normal period of incubation for fixed virus. Of the remaining 12 experiments five remained healthy and seven died at periods varying from eight to 48 days after the experiments. Three of these seven fatal cases showed symptoms of wasting before death and four died suddenly, being apparently well the day before.

one contracted hydrophobia during treatment and one within 14 days after the completion of treatment. The average time which elapsed between the infliction of the bites and commencement of treatment in these 202 cases was 10·3 days. In a number of the worst cases of all serum was injected into and around the wounds and none of these proved failures. Owing to the fact that serum treatment was followed by the ordinary treatment one cannot say for certain whether any real benefit was derived from the use of the serum, but taking into consideration the severity of these cases the probabilities are that the preliminary treatment with serum was instrumental in saving some of them from hydrophobia.

In the absence of any more definite proof as evidenced by a more extended trial one cannot say anything more in favour of the serum except that it may turn out to be a valuable first dressing to apply to the wounds produced by rabid animals soon after their infliction, in addition to being inoculated into the tissues in their vicinity.

To sum up, its uses are likely to be in the following directions: 1. As an adjunct to the usual treatment in severely bitten and late cases. 2. Direct and early application to the wounds produced by rabid animals. 3. Injection into the tissues in the vicinity of the bites.

II.—THE RABICIDAL PROPERTIES OF THE SERUM OF PATIENTS AFTER UNDERGOING ANTIRABIC TREATMENT.

Knowing that the serum of an animal highly immunised against rabies possesses in a marked degree the property of

TABLE IV.—*Experiments to Test the Effects on Fixed Rabies Virus of the Serum of a Patient after Undergoing a Light Course of Antirabic Treatment for 18 Days. A Light Course was Indicated in this Case on Account of the Patient's Alcoholic Habits. Serum and Virus (1 per cent. Emulsion) Mixed in Equal Volumes and Inoculated Subdurally in Healthy, Full-grown Rabbits.*

No. of experiment.	Date of experiment.	Time after completion of treatment when serum was tested.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	May 4th.	3 days.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour; 37° C.	0·15 c.c.	May 13th.	9 days.	Incubation period prolonged two days.
2	„ 7th.	6 „	„	„	„	„ 15th.	„	Incubation period prolonged one day.
3	„ 9th.	8 „	„	„	„	—	—	Alive and well June 30th, 52 days after the experiment. *Treatment off.*
4	„ 10th.	9 „	„	„	„	May 18th.	8 days.	Incubation period prolonged one day.
5	„ 11th.	10 „	„	„	„	June 1st.	21 „	Incubation period prolonged 14 days.
6	„ 12th.	11 „	„	„	„	May 19th.	7 „	Incubation period normal for fixed virus.
7	„ 13th.	12 „	„	„	„	—	—	Alive and well June 30th, 48 days after the experiment. *Treatment off.*
8	„ 14th.	13 „	„	„	„	May 22nd.	8 days.	Incubation period prolonged one day.
9	„ 15th.	14 „	„	„	„	„ 23rd.	8 „	„ „ „
10	„ 16th.	15 „	„	„	„	„ 25th.	9 „	Incubation period prolonged two days.

Remarks.—Of these ten experiments eight developed rabies and two remained healthy. The shortest period of incubation was seven days and the longest 21 days. Average 9·7 days, as compared with 7 days, the normal period for fixed virus.

TABLE V.—*Experiments to Test the Effects on Fixed Rabies Virus of the Serum of a Patient after Undergoing a Very Light Course of Antirabic Treatment lasting only 10 Days. Serum and Virus (1 per cent. Emulsion) Mixed in Equal Volumes and Inoculated Subdurally in Healthy Full-grown Rabbits.*

No. of experiment.	Date of experiment.	Time after completion of treatment when serum was tested.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	May 7th.	1 day.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour; 37°C.	0·15 c.c.	May 16th.	9 days.	Incubation period prolonged two days.
2	„ 8th.	2 days.	„	„	„	„ 17th.	„	„ „ „
3	„ 9th.	3 „	„	„	„	„ 17th.	8 days.	Incubation period prolonged one day.
4	„ 10th.	4 „	„	„	„	„ 18th.	„	„ „ „
5	„ 11th.	5 „	„	„	„	—	—	Alive and well June 24th, 44 days after the experiment. Died June 29th. Wasting before death. No paralysis.
6	„ 12th.	6 „	„	„	„	—	—	Alive and well June 30th, 49 days after the experiment. *Experiment off.*
7	„ 13th.	7 „	„	„	„	May 21st.	8 days.	Incubation period prolonged one day.
8	„ 14th.	8 „	„	„	„	—	—	Alive and well June 20th, 37 days after the experiment. Died June 22nd. Began to waste before death. No paralysis.
9	„ 15th.	9 „	„	„	„	May 27th.	12 days.	Incubation period prolonged five days.
10	„ 16th.	10 „	„	„	„	„ 24th.	8 „	Incubation period prolonged one day.
11	„ 17th.	11 „	„	„	„	June 28th.	11 „	Incubation period prolonged four days.
12	„ 18th.	12 „	„	„	„	—	—	Alive and well June 11th, 24 days after the experiment. Died June 14th. Wasting before death. No paralysis.
13	„ 19th.	13 „	„	„	„	May 27th.	8 days.	Incubation period prolonged one day.
14	„ 20th.	14 „	„	„	„	„ 28th.	„	„ „ „
15	„ 21st.	15 „	„	„	„	„ 31st.	10 days.	Incubation period prolonged three days.
16	„ 22nd.	16 „	„	„	„	„ 31st.	9 „	Incubation period prolonged two days.
17	„ 23rd.	17 „	„	„	„	„ 31st.	8 „	Incubation period prolonged one day.
18	„ 24th.	18 „	„	„	„	June 1st.	„	„ „ „
19	„ 25th.	19 „	„	„	„	—	—	Alive and well June 30th, 36 days after the experiment. *Experiment off.*
20	„ 26th.	20 „	„	„	„	June 3rd.	8 days.	Incubation period prolonged one day.

Remarks.—Of these 21 experiments 16 developed rabies. The shortest incubation period was eight days and the longest 12 days. Average 8·8 days, as compared with 7 days, the normal period of incubation for fixed virus. Of the remaining five experiments two remained healthy and three died at periods varying from 27 to 49 days after the experiments, showing symptoms of wasting before death.

destroying rabies virus *in vitro*, it is only reasonable to expect that the serum of a patient after undergoing antirabic treatment should also possess similar properties, but not necessarily in such a marked degree as in the case of an animal specially and more highly immunised. If this be true, there should be no difficulty in testing the rabicidal action of the serum of a treated person on living rabies virus, because on the completion of a successful course of antirabic treatment an active immunity against rabies has been acquired, an immunity which is in all probability germicidal rather than antitoxic, as evidenced by the action of the serum of an immunised animal on fresh fixed virus. The subject is important from a practical point of view, because it opens up the possibility of testing the efficacy of antirabic treatment in any particular case. In the event of Patients undergoing antirabic treatment are given one or two doses of rabies virus daily for a fortnight or three weeks, and sometimes longer. Under these conditions a negative phase occurring early in the treatment would become cumulative, a condition which would be incompatible with the main object of treatment—viz., to confer a high degree of immunity in the shortest possible period of time. The explanation is probably due to the fact of the daily doses being just sufficient to bring about a reaction capable of stimulating the production of antibodies, and that the immunity thus induced increases daily from the time treatment is commenced. On this assumption we would get an accumulation of antibodies and not a cumulative negative phase. The reverse of this would mean failure, a result which in practice we know to be quite the exception.

TABLE VI.—*Experiments to Test the Effects on Fixed Rabies Virus of the Serum of a Patient after Undergoing Antirabic Treatment for 24 Days but not by the Intensive Method. Serum and Virus (1 per cent. Emulsion) Mixed in Equal Volumes and Inoculated Subdurally in Healthy Full-grown Rabbits.*

No. of experiment.	Date of experiment.	Time after completion of treatment when serum was tested.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
1	1905. May 16th.	3 days.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour: 37° C.	0·15 c.c.	—	—	Alive and apparently well on July 4th, 50 days after the experiment. Found dead in cage July 5th. No paralysis before death.
2	,, 17th.	4 ,,	,,	,,	,,	May 28th.	11 days.	Incubation period prolonged four days.
3	,, 18th.	5 ,,	,,	,,	,,	—	—	Alive and well June 30th, 43 days after the experiment. *Experiment off.*
4	,, 19th.	6 ,,	,,	,,	,,	—	—	Alive and well June 30th, 42 days after the experiment. *Experiment off.*
5	,, 20th.	7 ,,	,,	,,	,,	June 7th.	17 days.	Incubation period prolonged ten days.
6	,, 21st.	8 ,,	,,	,,	,,	—	—	Alive and well June 30th, 40 days after the experiment. *Experiment off.*
7	,, 22nd.	9 ,,	,,	,,	,,	May 31st.	9 days.	Incubation period prolonged two days.
8	,, 23rd.	10 ,,	,,	,,	,,	June 2nd.	10 ,,	Incubation period prolonged three days.
9	,, 24th.	11 ,,	,,	,,	,,	,, 3rd.	10 ,,	,, ,, ,,
10	,, 25th.	12 ,,	,,	,,	,,	—	—	Alive and well June 30th, 36 days after the experiment. Died July 1st. No paralysis before death.
11	,, 26th.	13 ,,	,,	,,	,,	June 18th.	23 days.	Incubation period prolonged 16 days.
12	,, 27th.	14 ,,	,,	,,	,,	,, 6th.	10 ,,	Incubation period prolonged three days.
13	,, 28th.	15 ,,	,,	,,	,,	,, 10th.	13 ,,	Incubation period prolonged six days.
14	,, 29th.	16 ,,	,,	,,	,,	—	—	Alive and well June 30th, 32 days after the experiment. *Experiment off.*
15	,, 30th.	17 ,,	,,	,,	,,	—	—	Alive and well June 30th, 31 days after the experiment. *Experiment off.*
16	,, 31st.	18 ,,	,,	,,	,,	—	—	Alive and well June 12th, 12 days after the experiment. Found dead in cage June 15th. No paralysis before death.
17	June 1st.	19 ,,	,,	,,	,,	July 5th.	34 days.	Incubation period prolonged 27 days.
18	,, 2nd.	20 ,,	,,	,,	,,	—	—	Alive and well June 30th, 28 days after the experiment. *Experiment off.*
19	,, 3rd.	21 ,,	,,	,,	,,	—	—	Alive and well June 30th, 27 days after the experiment. *Experiment off.*
20	,, 4th.	22 ,,	,,	,,	,,	June 17th.	13 days.	Incubation period prolonged six days.

Remarks.—Of these 20 experiments 10 developed rabies. The shortest incubation period was nine days and the longest 34 days. Average 15 days, as compared with 7 days, the normal incubation period for fixed virus. Of the remaining 10 experiments, seven remained healthy and three died suddenly at periods varying from 13 to 51 days after the experiment, being apparently well the day before.

the serum of a patient on completion of treatment giving evidence of a well-marked rabicidal action one would feel justified in inferring that his immunity was of a high order. A patient whose serum when mixed with fresh fixed virus and inoculated subdurally in rabbits failed to cause any delay in the incubation period of rabies might well be looked upon as a person having a low degree of immunity or possibly none at all. In a case of this kind further treatment would be indicated.

When testing the serum of a patient immediately on completion of treatment it is doubtful whether we should have to take into consideration the possibility of a negative phase. When we examine the conditions under which patients are treated it is difficult to believe that a negative phase ever does occur in this particular method of immunisation.

Procedure Adopted.

A uniform line of procedure was adhered to throughout, and only fixed virus was used as a test for the serum. Strict aseptic precautions were observed. The blood was taken from the finger, filled into glass capsules, allowed to clot, and placed in a dark cupboard at room temperature (about 22° C.) for 24 hours. The virus was obtained daily from the fresh medulla of one of the rabbits of the series the cord of which was used for the preparation of vaccine at the institute. For each experiment the virus was taken from the medulla of a different rabbit, and only from an animal which had died from rabies that day. A small portion of the medulla was removed, carefully weighed, then finely emulsified in a conical glass with a measured quantity of sterile normal salt solution, so as to make a 1 per cent. or 5 per cent. emulsion,

as the case might be. When the emulsion had stood for from 10 to 15 minutes so as to allow any heavy particles to fall to the bottom a measured amount was pipetted off from the upper part and well mixed with an equal volume of clear serum. The mixture of the virus and the serum was then placed in an incubator at a temperature of 37° C. for one hour and when taken out was again well mixed before being filled into the inoculating syringe. Healthy full-grown rabbits were used in all cases and the inoculations were carried out subdurally after trephining in the usual way. Daily observations were made on each experiment.

On analysing the results of these experiments it will be noticed that the animals inoculated may be divided into two classes: (1) those that developed rabies and (2) those that did not develop rabies. In the former class the animals showed unmistakable symptoms of rabies and died from that disease. In the latter class some died and others remained healthy. In those that died in Class 2 none showed any symptoms of paralysis but some gradually wasted before death and others died suddenly without any wasting. It is just possible that many of the deaths in Class 2 were due to the neurotoxic action of the serum on the brain.

When we analyse the conditions under which the patients who supplied the serum were immunised—viz., with the spinal cords of rabbits—an immune serum produced under these conditions must necessarily contain antibodies capable of giving rise to cytolytic action on the nerve-centres of rabbits. That the symptoms of wasting took some time to develop in some fatal cases, and failed to do so in others, was probably due to the small quantity of serum present in the mixture inoculated on to the surface of the brain. As evidence in support of the hypothesis of a cytolytic action of the serum on the brain, I may mention that in several cases (not given in these experiments) in which the antirabic serum from a highly immunised pony was given hypodermically in large doses to rabbits, with the object of protecting them against the experimental infection of wounds with rabies virus, several of the animals died suddenly some weeks afterwards; some showed symptoms of wasting before death, and others did not. The neurotoxic action of the serum was in all probability the cause of death in these cases.

It is difficult to explain why the serum of a patient after antirabic treatment may one day give evidence of only prolonging the incubation period for a few days, and on the next day of complete rabicidal action. A possible explanation might be that the amount of virus in a 1 per cent. emulsion from the medulla of different rabbits varies widely. On the other hand, an equally plausible explanation might be that the rabicidal substances in the serum of a treated patient vary from day to day. It would be impossible to say whether either or both of these hypotheses explain the variation in the results obtained.

TABLE VII.—*Experiments to Test the Effects on Fixed Rabies Virus of the Serum of a Patient after Undergoing the Ordinary Course of Antirabic Treatment lasting 20 Days. Serum and Virus (1 per cent. Emulsion) Mixed in Equal Volumes and Inoculated Subdurally in Healthy Full-grown Rabbits.*

No. of experiment.	Date of experiment.	Time after completion of treatment when serum was tested.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	May 23rd.	1 day.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour; 37° C.	0·15 c.c.	June 2nd.	10 days.	Incubation period prolonged three days.
2	,, 24th.	2 days.	,,	,,	,,	,, 3rd.	10 ,,	,, ,, ,,
3	,, 25th.	3 ,,	,,	,,	,,	—	—	Was quite well June 16th, 23 days after the experiment. Was ill June 17th (stomach swollen) and died on June 18th. No paralysis.
4	,, 26th.	4 ,,	,,	,,	,,	—	—	Died June 10th. No paralysis before death. Was removed before an experiment could be made with the medulla.
5	,, 27th.	5 ,,	,,	,,	,,	—	—	Alive and well June 30th, 34 days after the experiment. *Experiment off.*
6	,, 28th.	6 ,,	,,	,,	,,	—	—	Alive and well June 30th, 33 days after the experiment. *Experiment off.*
7	,, 29th.	7 ,,	,,	,,	,,	June 7th.	9 days.	Incubation period prolonged two days.
8	,, 30th.	8 ,,	,,	,,	,,	—	—	Alive and well June 17th, 17 days after the experiment. Died June 18th. No paralysis before death.
9	,, 31st.	9 ,,	,,	,,	,,	June 12th.	12 days.	Incubation period prolonged five days.
10	June 1st.	10 ,,	,,	,,	,,	—	—	Alive and well June 30th, 29 days after the experiment. *Experiment off.*
11	,, 2nd.	11 ,,	,,	,,	,,	—	—	Alive and well June 30th, 28 days after the experiment. *Experiment off.*
12	,, 3rd.	12 ,,	,,	,,	,,	June 14th.	11 days.	Incubation period prolonged four days.
13	,, 4th.	13 ,,	,,	,,	,,	,,	10 ,,	Incubation period prolonged three days.
14	,, 6th.	15 ,,	,,	,,	,,	,,	8 ,,	Incubation period prolonged one day.
15	,, 7th.	16 ,,	,,	,,	,,	June 17th.	10 ,,	Incubation period prolonged three days.
16	,, 9th.	18 ,,	,,	,,	,,	—	—	Alive and well June 30th, 21 days after the experiment. *Experiment off.*
17	,, 10th.	19 ,,	,,	,,	,,	June 20th.	10 days.	Incubation period prolonged three days.
18	,, 11th.	20 ,,	,,	,,	,,	—	—	Alive and well June 30th, 19 days after the experiment. *Experiment off.*
19	,, 12th.	21 ,,	,,	,,	,,	—	—	Alive and well June 30th, 18 days after the experiment. *Experiment off.*

Remarks.—Of these 19 experiments nine developed rabies. The shortest incubation period was eight days and the longest 12 days. Average 10 days, as compared with 7 days, the normal incubation period for fixed virus. Of the remaining 10 experiments seven remained healthy and three died suddenly at periods varying from 15 to 25 days after the experiment.

III.—EXPERIMENTS WITH THE BLOOD OF A PATIENT SUFFERING FROM HYDROPHOBIA.

In April, 1905, a patient arrived at the Institute in the early stages of hydrophobia. I took a few capsules of blood

from his finger, some of which I citrated to the extent of 0·5 per cent. citrate of sodium and others were allowed to clot in the ordinary way. Immediately after the citrated blood was collected three healthy full-grown rabbits were inoculated subdurally with ½ cubic centimetre each. None of these animals developed rabies. (See Table VIII.) These results lend confirmation to Pasteur's statement that the virus is not found in the blood. The serum from the non-citrated blood was mixed with an equal volume of a 1 per cent. fixed virus emulsion, then placed in the incubator for one hour at 37° C., and two rabbits inoculated subdurally with 0·15 cubic centimetre each. Both these animals developed rabies, one on the tenth day and the other on the eleventh day after the experiment—a prolongation of the incubation period for fixed virus of three and four days respectively. (See Table IX.). In these two experiments the serum was kept in an ice chest for 48 hours before being used, so there is a possibility that it may have lost to some extent in complement. The fact of there being a prolongation of the incubation period to the extent of three and four days would indicate that during the onset of hydrophobia an attempt is made to combat the virus by the elaboration of antibodies. The patient from whom the serum was obtained was in the early stages of the disease, and the only symptoms he had at the time were difficulty in swallowing and a little mental excitement. On the second day his symptoms were more marked and he died on the third day.

TABLE VIII.—*Experiments with the Blood of a Patient Suffering from Hydrophobia, when Inoculated Subdurally in Rabbits.*

No. of experiment.	Date of experiment.	Animal inoculated.	Substance inoculated.	Quantity inoculated.	Method of inoculation.	Results.
	1905.					
1	April 26th.	Rabbit full grown.	Blood of a patient suffering from hydrophobia.	0·5 c.c. (citrated 0·5 %).	Subdurally.	Alive and well June 24th, two months after the experiment.
2	,,	,,	,,	,,	,,	,,
3	,,	,,	,,	,,	,,	Died May 15th, but showed no symptoms of rabies before death. A portion of the medulla used to inoculate another rabbit failed to give it rabies.

Remarks.—The blood of a patient suffering from hydrophobia failed to give rabies to rabbits in the above three instances when inoculated subdurally.

TABLE IX.—*Experiments with the Serum of a Patient suffering from Hydrophobia, when Serum mixed with Fixed Virus and Inoculated Subdurally in Rabbits.*

No. of experiment.	Date of experiment.	Age of serum.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	April 29th.	48 hours (in ice chest).	Serum 1 vol. Fixed virus 1 vol. 1 % emulsion.	1 hour; 37° C.	0·15 c.c.	May 8th.	10 days.	Incubation period prolonged three days.
2	,,	,,	,,	2 hours; 37° C.	,,	,, 9th.	11 days.	Incubation period prolonged four days.

Remarks.—In these two experiments the incubation periods were 10 and 11 days respectively, as compared with 7 days, the incubation period for fixed virus either used by itself or mixed with normal human serum.

TABLE X.—*Control Experiments with Normal Human Serum and Fixed Rabies Virus.*

No. of experiment.	Date of experiment.	Source of serum used.	Proportion of serum and virus mixed.	Time and temperature serum and virus in contact before inoculation.	Quantity inoculated.	Date of commencing paralysis.	Incubation period.	Results.
	1905.							
1	March 22nd.	Normal man.	Serum 1 vol. 24 hours old virus 1 vol. 1% emulsion.	1 hour; 37° C.	0·15 c.c.	March 29th.	7 days	Normal period of incubation for fixed virus when inoculated subdurally in rabbits.
2	May 23rd.	,,	,,	,,	,,	May 30th.	,,	,,
3	,, 24th.	,,	,,	,,	,,	,, 31st.	,,	,,
4	,, 25th.	,,	,,	,,	,,	June 1st.	,,	,,
5	,, 26th.	,,	,,	,,	,,	,, 2nd.	,,	,,
6	,, 27th.	,,	,,	,,	,,	,, 3rd.	,,	,,
7	,, 28th.	,,	,,	,,	,,	,, 4th.	,,	,,
8	June 23rd.	,,	,,	,,	,,	,, 30th.	,,	,,

Remarks.—In all these controls the serum was derived from a different person for each experiment, and the fixed virus from a different rabbit. Full-grown rabbits were used, and the experiments were similar in every detail to those for which they are controls, except that normal human serum instead of serum from a treated person was used. Several more controls done at different times might be added on, but these would serve no more useful purpose than the above, for the results were invariably the same, viz., *rabies seventh day.*

REMARKS ON THE TABULATED RESULTS.

Tables I. and II. require no further comment.

Table III.—Ordinary treatment, but extended over a period of 22 days. 11 out of 22 experiments developed rabies; average period of incubation nine days.

Table IV.—Light treatment for 18 days. The patient was of alcoholic habits and it was doubtful whether he had been infected, hence the light treatment over an extended period. 8 out of 10 experiments developed rabies; average period of incubation 9·7 days. The result of this series of experiments would seem to indicate that light treatment does not confer a high degree of immunity.

Table V.—An example of very light treatment lasting only ten days. 16 out of 21 experiments developed rabies; average period of incubation 8·8 days. Here again it would seem that light treatment does not confer a high degree of immunity.

Table VI.—An example of ordinary treatment prolonged for

a period of 2½ days, but not by the intensive method. 10 out of 20 experiments developed rabies; average period of incubation *15 days*. The results of this series of experiments indicate that prolonged treatment confers a higher degree of immunity than treatment extended over a shorter period of time.

Table VII.—Ordinary treatment lasting 20 days. 9 out of 19 experiments developed rabies. Average period of incubation *10 days*.

Tables VIII., IX., and X. require no comment.

Further information will be found in the footnotes to the above tables.

SUMMARY OF CONCLUSIONS.

1. By immunising horses with fixed rabies virus it is possible to prepare a serum having well-marked rabicidal properties. Normal horse serum is devoid of these properties.

2. The rabicidal properties of this serum can be tested by mixing it with fixed virus and subsequently using the mixture to inoculate susceptible animals, such as rabbits, subdurally.

3. The indications for the use of such a serum would seem to be as an adjunct to the ordinary method of treatment in severely bitten and late cases. In severely bitten cases coming early for treatment it might also be injected into the wounds and the tissues in their vicinity.

4. The serum of patients after undergoing a course of antirabic treatment also gives evidence of containing rabicidal substances and the presence of these substances can be demonstrated in a manner similar to that mentioned in Conclusion 2. Normal human serum is devoid of these properties.

5. The rabicidal substances in the serum of a patient after antirabic treatment are a possible index of the amount of immunity conferred and the efficacy of treatment.

6. Prolonged treatment confers a higher degree of immunity, as judged by the rabicidal effects of the serum on fixed virus, than treatment extended over a shorter period of time.

7. The blood of a patient suffering from hydrophobia fails to infect rabbits when inoculated subdurally.

8. The serum of a patient in the early stages of hydrophobia is capable of prolonging the incubation period for fixed virus when mixed *in vitro* and inoculated subdurally in rabbits.

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SOME RECENT CASES OF CÆSAREAN SECTION.

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CASES 1 AND 2. *Cæsarean section performed twice on the same patient.*—A woman, aged 24 years, had a generally contracted pelvis, of which the true conjugate was about three and a half inches. Two previous children, delivered with forceps, had both succumbed during delivery, and a third child, born after the induction of premature labour, lived only a few minutes. The patient was very anxious to have a living child and in view of the safety of the modern operation such cases are very suitable for treatment by hysterotomy. From data given by the patient it was calculated that on March 28th, 1905, she would be within a few days of term. Operation was performed on this day and presented no difficulty, and, except for some temporary bronchitis, recovery was complete and satisfactory. Unfortunately, the child was not mature, for it weighed only four pounds and measured 17 inches. It was incubated but lived only four days. This shows that if the data given by the mother are wrong there is danger of delivering the child prematurely if we do not wait for labour to begin. The same woman was admitted in May, 1906, in the last month of her next pregnancy. Her last period had been from August 3rd to 9th, 1905, so that labour was expected about May 16th or later. It began spontaneously on May 8th, at 7 P.M., and Cæsarean section was performed at 5 30 the following morning. There was hardly any trace of the previous uterine incision, but some omental adhesions required separation. The placenta was anterior and required to be separated first. The child was a living female and throve well. She weighed six and a half pounds. In order to carry out the wish of the father and mother partial salpingectomy was performed in order to prevent future conception. Recovery was not very smooth, being complicated by some suppuration in the lower end of the wound, probably due to a uterine stitch abscess, which, however, was successfully treated by inserting a small rubber drainage-tube. She was discharged cured on June 16th.

CASES 3 AND 4. *Another patient on whom Cæsarean section was twice performed.*—A woman, aged 27 years, was rickety and did not walk till five years of age. She had a flat, rickety pelvis with oblique conjugate of about three and three-quarter inches. In each of four previous labours she had failed to bear a living child. They had been foot presentations and there had in each instance been much difficulty in delivering the after-coming head. Labour was expected on April 17th and the operation was performed on the 18th, before labour had commenced. There was no difficulty or complication and the mother suckled her child. It weighed only five pounds and I decided that in any future pregnancy I would wait till labour began. She was re-admitted on Oct. 11th, 1907, saying that she expected to be confined in the latter half of October. Labour pains did not begin till Nov. 8th. The abdomen was carefully opened along the scar of the old incision. There was a band of peritoneal adhesion between the uterus and the abdominal wall, but hardly any scar in the uterus. The placenta lay anterior and was removed first. The mother made an uncomplicated recovery and having a good supply of milk suckled the child, which has thriven very well. It weighed nearly eight pounds at birth.

CASE 5. *Dwarf pelvis.*—This case was that of a rickety dwarf 44 inches in height. There was a marked lordosis in the lumbar region and the tibiæ and femora were much curved. There was a small flat pelvis, the promontory filling the pelvis and coming within one and three-quarter inches of the pubes. The liquor amnii discharged on April 10th, 1906, and operation was performed at once. There were no difficulties or complications. The patient was sterilised. The child weighed six and a half pounds and throve well. At the operation I noticed some free ascitic fluid in the pelvis, as in some other cases. Good recovery ensued.

CASE 6. *Flat pelvis.*—The patient was a married woman, aged 34 years. She was sent in by Dr. C. H. Moorhouse because her two previous labours had resulted in stillborn children who died in delivery. The true conjugate was about three and one-eighth inches. Operation was performed on Jan. 9th, 1907; recovery ensued without complications. The patient was not sterilised. The child was a fairly well developed male but unfortunately died in three and a half hours from atelectasis pulmonum, as verified by post-mortem examination. Labour had commenced before operation.

CASES 7 AND 8. *Two operations on the same patient.*—Case 7 is of interest because the operation was done for a somewhat contracted pelvis and also as a method of dealing with ante-partum hæmorrhage. The mother was a Jewess. She had had one living child seven years before, although the true conjugate was about three inches. Before admission she had lost a great deal of blood but the fœtal heart was audible, beating 126 in the minute. She was very anxious to have a living child and labour had begun. Judging that the safest treatment for mother and child was to deliver by hysterotomy I operated at once (Feb. 3rd, 1907). The placenta was attached to the posterior uterine wall above the "danger zone," but the lower part was already separated, and to this dark blood clot was adherent. The child was a well-developed male, weighing 6½ pounds. It throve well and the mother recovered without complication. On May 3rd, 1908, Cæsarean section was again performed on this patient and a living male was delivered without complication. Labour had begun. In this case (Case 8) salpingectomy was performed. Good recovery.

CASE 9. *Osteomalacia.*—This patient was born in Leeds and had lived a few miles lower down the river. She had had no serious illness up to marriage at the age of 27 years in 1892. Her first two pregnancies terminated in normal delivery of living children at term, then came an abortion at the third month, and then a full-term easy labour. Her fifth pregnancy ended in abortion at three months and her sixth in the delivery of a stillborn child said to have been dead a week. After this confinement—i.e., about seven years ago—she first noticed symptoms of osteomalacia—namely,

lameness with pain on walking and in the bottom of the back on stooping. The seventh pregnancy ended in a still-birth. At the end of the eighth pregnancy she was brought in labour to the Leeds Infirmary (March 18th, 1906). She said that she had lost much in stature and she walked very lamely, stooping forwards, and she complained of pain when lifted in bed. The head was presenting. The pubic arch was narrowed, so that in trying to take the oblique conjugate the finger would not pass up to the bottom of the symphysis. There was rostration of the os pubis. As there were grounds for thinking that the vagina was not aseptic Cæsarean section was not performed, but the child was delivered by version, the after-coming head requiring perforation. I thought the pubic arch opened a little during extraction, as sometimes is the case in soft-boned pelves of this sort. The patient made a good recovery. She was admitted again on June 18th, 1907, in the last month of her ninth pregnancy. She was very sallow and very lame and had lost weight. Cæsarean section was performed on June 22nd at about the time when labour was supposed to be due. It presented no difficulties and both ovaries were removed with a view of curing the osteomalacia. She recovered without complication. The child was a puny male weighing barely four pounds. He was incubated and every effort made to rear him. He could swallow and did not at first suffer from vomiting or diarrhœa. At the age of three weeks Dr. W. H. M. Telling kindly took him under his care at the Hospital for Women and Children. As diluted milk did not then agree with him he was fed on peptonised milk and was kept in the incubator. The temperature was always subnormal, and if an attempt were made to take him out of the incubator the condition would become worse. He never weighed above four pounds and died suddenly in the eleventh week of life. In December, 1907, the mother reports that she keeps very well "in herself" and that she has less pain in her legs, is not so lame, and can get about much better.

As I have published a clinical lecture on the history and technique of Cæsarean section with nine previous cases performed in this hospital,[1] I will here only note a few points which these nine additional cases suggest. So far as the mother is concerned it is entirely satisfactory to operate before labour begins, but the interests of the child are best secured by waiting until the full term of pregnancy, for the longer it can be incubated in its mother's womb the better it is qualified to live and thrive in the world outside. Calculations as to the duration of pregnancy are notoriously uncertain, and, indeed, the period of utero-gestation is not a fixed quantity. In all ranks of society we hear of unborn children who are considered to be *overdue*. The fact is that the fruit falls when it is ripe and it is a mistake to gather it prematurely; and there seems to be some danger of doing so, judging by my experience, if labour be anticipated. The operation is very easy and safe in experienced hands, granting only that the patient has not been the subject of ill-advised attempts to deliver in other ways and that she is in an unimpaired condition, and that the parturient canal is aseptic. I do not think that any personal precautions of the operator can give absolute certainty that the vagina and cervix are quite free from pathogenic organisms. A case is on record where a child delivered by Cæsarean section was found to have the conjunctiva infected by purulent ophthalmia, so that presumably infection was present above the os internum. There is a possibility of a uterine stitch abscess sometimes arising through infection from the endometrial surface of the uterine incision. If there should be any reason to suspect this after operation the treatment would be to take out the lowest abdominal stitch and insert a rubber drainage-tube. During operation it is well not to make the incision too low, but avoiding the lower uterine segment to extend upwards rather than downwards.

In regard to sterilising, my practice has hitherto been to be largely guided by the expressed wishes of the two parents. I think that Cæsarean section ought to be more frequently performed for contracted pelves when experience has proved that the mother cannot bear living children even though the pelvic diameters place the case on the border line of possible delivery as laid down in text-books. Osteomalacia is rare in the West Riding as in other parts of England, but I have seen two cases in the last seven years. The case here recorded seems to have benefited decidedly from oöphorectomy, as osteomalacia usually does.

Leeds.

[1] THE LANCET, Jan. 9th (p. 76) and Oct. 1st (p. 952), 1904.

THE PROTRACTED USE OF DIGITALIS.

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THE use of digitalis as a drug has been compared with that of the whip applied to an overworked horse. The *protracted use* of the drug may well be looked upon as crutches which enable sufferers from cardiac diseases to hobble along for a very long time to come. It was chance that led to the appreciation of this method. A highly intelligent engineer suffering from hypertrophy of the heart had for five years continuously taken small doses of digitalis—his state of health being under careful observation during that period—without any phenomena of poisoning manifesting themselves. Kussmaul utilised this case at the time in order to discuss the question of digitalis poisoning consequent upon so-called accumulation. This method of applying the drug by way of protracted medication and in small, almost homœopathic, doses, so to speak, dates back, however, much farther than is generally assumed. For from the *Charité-Annalen* one learns that Fräntzel (whose writings are an almost inexhaustible source of information for later authors) already employed the *dosis refracta* of digitalis.

It is certain that digitalis administered in the way which was formerly customary when employed for a long period of time, even in small doses, had a so-called cumulative effect in many instances, whilst in others such medication proved quite ineffective. Such refractory cases, however, will always be met with. Eichhorst has shown that it is necessary for the cardiac muscle to be sufficiently capable of performing its function if digitalis is to take effect. Should this not be the case the effect does not ensue, and provided the digitalis preparation used is a good and reliable one its failure to produce an effect on the heart suggests a thoroughly unfavourable prognosis, for in such cases no other remedy is likely to prove of service.

Again, in other cases the cumulative effect takes place because the excretion of the active substances does not keep pace with the absorption, and strict supervision, therefore, becomes imperative. It was strange that such a cumulative effect is not constant. Some authors have noticed it and thereupon prohibited its protracted administration; others have not observed it or have done so but seldom, and continued its use. Naunyn may be right in advocating the view that in general there are no urgent reasons for fearing the cumulative effect of the drug. Until very recently, however, we had no explanation of the cumulative effect; experimental evidence was absolutely lacking.

From the recent researches of Focke and others we know how varied is the amount of efficacious substances contained in digitalis leaves and how fluctuating the proportion of active principles. Hence we can well imagine why a cumulative effect ensues in one case and remains absent in another.

This subject had been made clearer and more understandable from the recent writings of Cloetta,[1] who showed by experiments on animals that the effect produced by crystallised digitoxin differed from that due to the amorphous digitoxin.

Fränkel[2] was the first to make experiments on animals He employed digitoxin in the crystallised form and found that injections of very small doses into cats were followed by cumulative effects. Now, when it was observed that digalen (digitoxinum solubile Cloetta) did not produce a cumulative effect in the respective patients the fact was very remarkable, considering that the majority of the authors looked upon the cumulative effect as being characteristic of a serviceable preparation. It was all the more puzzling since in the experiments on animals no difference was observed in the effect produced on the cardiac muscle by digalen and crystallised digitoxin respectively (Freund,[3] Sasaki[4]). Experiments according to Fränkel's method had hitherto, it is true, not yet been made. The fact was borne out by the increasing number of results obtained in practice showing that the administration of digalen to sufferers from cardiac diseases was not followed by cumulative effects.[5] I have

[1] Münchener Medicinische Wochenschrift, 1906, No. 47.
[2] Archiv für Experimentelle Pathologie und Pharmacologie, vol. li.
[3] Zeitschrift für Experimentelle Pathologie und Therapie, 1905, vol.
[4] Berliner Klinische Wochenschrift, 1905, No. 26.
[5] The cumulative effect was not observed by Dennig (Jahrbuch

not observed any such effect in the numerous cases under my care.

Now Cloetta's experiments on animals have clearly demonstrated that there exists a difference between these preparations, inasmuch as after protracted digalen treatment no cumulative effect was observed in cats, whereas crystallised digitoxin caused in the same animals vomiting, salivation, and anorexia, besides arrhythmia. Cloetta has shown that it is not the molecular weight of the substance (280 as against 552 of crystallised digitoxin) which decides the toxic effect produced, but *the fact that the preparation has been crystallised.*

Several French preparations containing crystallised digitoxin, after trials made for the sake of verification, were found to have a cumulative effect. By way of analogy Cloetta refers to the behaviour of an amorphous form of physostigmine, which also differs in its action from that of the crystallised form (Harnack). Hence the cumulative effect observed by many authors to follow the use of digitalis explains itself by the fact that in the digitalis leaves employed the amorphous digitoxin contained in the fresh preparations must have been transformed into a state analogous to the crystallised digitoxin, a fact which has likewise been proved by Cloetta.

Cloetta's experimental researches are the first which have reliably demonstrated the fact that there is a digitalis preparation—namely, digalen—which does not possess any dangerous or disagreeable cumulative action.

The question now arises, In which of the cardiac diseases is it advisable to resort to protracted medication? Even the acute disorders frequently required a longer period of medication than that which was customary, and one often had recourse to the expedient of giving strophanthus or camphor in between, resuming the digitalis medication after an interval of several days. Even more than the temporarily disturbed valvular defects *do the chronic affections of the cardiac muscle need protracted treatment.* Seeing that these affections predominate in medical practice the prolonged use of digitalis assumes a still greater importance. In patients suffering from fatty heart digitalis, as a rule, does not agree. In the case of fatty degeneration even digitalis cannot save what has been lost already. In neurotic diseases of the heart good results are but seldom seen except when the cardiac muscle is involved. Accordingly the following indications are left as being the most important—viz., myocarditis in all stages and of any pathogenesis, myasthenia cordis chronica with or without dilatation and hypertrophy, and weakness of the heart in the case of hypertrophy of the left side of the heart after nephritis of long standing.

Let me now describe briefly how the treatment is carried out. Kussmaul and Naunyn recommended protracted medication in all cases in which the usual mode of treatment did not produce long-lasting results and in which the phenomena of cardiac insufficiency reappeared within a very short time. They prescribed the digitalis leaves in substance in the form of powders or pills, 0·05 to 0·1 gramme per day; if required the dose was given twice a day. When the effect diminished the dose was afterwards increased. These authors laid stress on the fact that after long-continued use a lasting result might be ultimately obtained and then digitalis might be dispensed with.

This mode of treatment may, it is true, in conjunction with strict supervision, be free from danger and be serviceable, but in view of the unreliability of the drug one must always be prepared to face a cumulative effect. Seeing, however, that in digalen we have at our disposal a preparation—in fact, the only one of the numerous digitalis preparations produced during the last few years—which is exempt from a cumulative effect, it is better than any other officinal preparation suited for protracted medication, as here all the dangers inherent in the other preparations are absent.

As regards the pharmacology of this preparation I would refer readers to Cloetta's respective essays.[6] I would add a few remarks about the dosage in the case of protracted medication. Seeing that 0·15 gramme of folia digitalis corresponds to 1 cubic centimetre of digalen = 20 drops (16·9 minims), from 7 to 14 drops (= say 6 to 12 minims) would have to be administered once or twice per diem in the case of protracted medication; and, indeed, this small dose suffices to maintain the compensation in suitable cases.

Since the introduction of digalen I have given it in all suitable cases and always with satisfactory results. No disagreeable gastro-intestinal disturbances at any time manifested themselves. Of all the allied preparations I deem digalen most suitable for protracted medication. The usefulness of this drug in cardiac disease has recently been highly spoken of by Dr. Ernest von Leyden, my friend and respected teacher.

prakt. Med. 1905; De Renzi (Nuova Rivista Clinico-Terapeutica, 1905, No. 7); Bozzolo (Gazzetta degli Ospedali e delle Cliniche, 1905, Nr. 9); Schwyzer (Medical News, 1905, No. 21); Silvestri e Fiorio (Gazzetta Medica Veronese, Anno I., No. 7).

[6] Münchener Medicinische Wochenschrift, 1904, No. 33.

SUPRARENAL HÆMORRHAGE IN AN INFANT: ITS RELATION TO HÆMOPHILIA.[1]

BY B. G. MORISON, M.D., C.M. EDIN.

THE following case of hæmorrhage into the suprarenal body presents certain features which may, I hope, justify its publication. These are—the occurrence of the lesion very shortly after birth, its characteristic type, and particularly the observation of a hæmophilic tendency prior to any of the more obvious signs of adrenal injury.

A male infant, a first child, was born about the middle of the ninth month of pregnancy after normal labour. The umbilical cord, a thick one, was tied three times in succession on account of bleeding which appeared at the seat of ligature. The ligature was made thick and its material varied in order to obviate damage to the vascular walls, but apparently in vain. On the third occasion a little blood was seen to burst through the cord (uninjured here) above the ligature. Finally, the cord was bound round with double cyanide gauze, kept dry, and regularly dusted with boric powder. It is my practice to allow a child to cry before tying the cord. I mention this because Kiwisch and others have attributed hæmorrhage in newly born infants to undue haste in applying the ligature. Nothing further was noted in this case until the ninth day, when the child seemed weak and would not take the breast. There was some jaundice but the stools were healthy and the cord was dry. There was no umbilical redness. On the tenth day the infant was stronger; snuffling was noticed and small doses of grey powder were prescribed in view of any possible specific taint, though the history did not justify this suspicion. The stools were green. On the eleventh day the cord was nearly off but was still attached. Seen again on the seventeenth day the child was feeding fairly well; the cord had just become detached. On the two following days the parents noticed some rather bright-red patches on the chin. The child became somnolent and refused nourishment, but had neither sickness nor diarrhœa. On the day following I was sent for. The child had suddenly become much emaciated and generally worse during the night. There were bright-red patches on the chin, round the mouth, toward the back of the scalp, and at the tips of the fingers and toes. The scrotum was rather full, red, and slightly eroded. The navel, still being dusted with boric powder, was surrounded by a red, rather prominent ring within which was an unhealed surface. At the circumference of this there was slight separation of cuticle. The heart beat was fairly strong and for the first time a rise of temperature was noted (100·8° F.). The child was "slightly convulsed" all day, as I learned afterwards. At 9 P.M. the temperature was 102°, the erythematous spots were disappearing, but the scrotum was more full and livid. The stools were yellow for the first time in ten days. Death occurred at 11 P.M. on this the twentieth day after birth.

Post-mortem examination showed a red lividity about the chin and mouth, the scrotum full and livid. The thoracic and abdominal viscera generally were apparently normal but for the presence of passive congestion; the spleen was of a deep slate-blue colour, not softened, and on section showing nothing noteworthy; the pancreas was normal. The right suprarenal body was also normal though passively congested; the left was very dark slate-blue. Opened *in situ* it at once collapsed and shed its fluid contents into the abdomen. On examination it appeared to be converted into a blood sac, was very soft, and partly torn in removal. There were no signs of inflammation spreading up from the umbilicus and the umbilical cord inside the abdomen was small, pale, and

[1] From notes communicated to the Æsculapian Society.

evidently not diseased. The brain was not examined. The microscopic report by the Clinical Research Association a considerable time after hardening in formalin and methylated spirit is as follows: "The right suprarenal shows no abnormal appearances. The left suprarenal is much broken up but there are the remains of hæmorrhage in its medullary substance, both in the form of extravasated corpuscles and as granules of pigment. The condition is probably the result of strain and not of disease."

The family history in this case is not a good one. Both grandmothers had died from carcinoma and the maternal grandfather from phthisis. I can find no evidence of specific taint nor have I any reason to suspect this. Clinically the case is typical of hæmorrhage into the adrenal medulla and its character was verified by the necropsy. It appears to me that its chief interest and significance depend upon those earlier evidences of failure of the vaso-tonic function of the medulla which have been described; the signs of a hæmophilic weakness, the general atony, the slight preliminary purpura, and increasing lassitude which culminated in the final purpuric explosion, nervous and general collapse. It appears as if there had been present at birth, or possibly before it, in the medulla some premonitory congestion or slight hæmorrhage followed by a sudden final apoplexy, a condition of things which finds its counterpart at the opposite extreme of life in the cerebrum. How far hæmophilia is dependent on adrenal inadequacy remains to be proved, but the present case is suggestive in this connexion. So likewise is the fact that in a certain proportion of these cases hæmorrhages have been found in other parts of the body—e.g., small extravasations in the floor of the lateral ventricles (F. E. Batten [2]), purpuric spots in the parietal pleura (F. W. Andrewes [3]), small hæmorrhages in the pleuræ, lung, epi- and peri-cardium (L. S. Dudgeon [4]). It is also noteworthy that adrenal hæmorrhage has been associated with a more general state of like nature in "hæmorrhage of the newly born," though the connexion in this latter case has not, as far as I know, been established.

These observations point to a fairly constant relation between hæmorrhage into the suprarenal medulla and the same condition elsewhere and our present physiological data point to the former as accounting for the latter. Dudgeon, Rivière, and others are inclined to regard suprarenal bleeding as of toxic origin, and it may be thus explained when associated with microbic diseases. I do not think that this interpretation is the only possible one. For my own case I am inclined to accept the view already quoted that strain or pressure during labour was the primary cause of the hæmorrhage with perhaps some assistance from inherent weakness of tissue related to the family history. The frequent failure to discover any micro-organisms in the suprarenals in these cases and the occurrence of "hæmorrhage in the newly born" would also seem to indicate that a toxic agent is not an indispensable antecedent.

Green Lanes, N.

A CASE OF INDICANURIA.

BY GORDON N. MONTGOMERY, M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEON TO THE DORSET COUNTY HOSPITAL.

As literature on this subject seems rather scarce a few notes on a case may be of interest.

The patient, a female, aged 32 years, is a servant at the above hospital. Her general health is good, except that she suffers at times from slight attacks of "petit mal." She says that she often has "trouble with her bowels," having to take pills sometimes to obtain an action. On March 2nd, having been constipated for several days, she took a pill of colocynth and hyoscyamus. This was her usual aperient. On the following day the bowels were relieved twice and she experienced some abdominal discomfort during the day. On this date the patient noticed that the urine was altered in colour and a specimen was brought to me. The colour varied in density during the following three days until March 6th, when it became much lighter, and on the next day it was quite normal. During these days the patient did her work as usual and felt quite well, except that she felt a little worried about the urine, which was coloured when passed. She had never passed urine like it before and has not done so since. The urine was of a dark blue-green colour, with a specific gravity of 1015; it was acid; there was no albumin or sugar. On adding a little chloroform to some urine in a test-tube the chloroform became a blue colour. When some urine was added to some boiling nitric acid a bluish ring was seen at the junction of the two liquids. There was no history of eating or drinking anything that she had not been accustomed to or of using carbolic acid in any form, or methylene blue.

Professor William Osler,[1] speaking of indicanuria, says: "The substance in the urine which has received this name is the indoxyl-sulphate of potassium, in which form it appears in the urine and is colourless. When concentrated acids or strong oxidising agents are added to the urine this substance is decomposed and the indigo set free. It is present only in small quantities in healthy urine. It is derived from the indol, a product formed in the intestine by the decomposition of the albumin under the influence of bacteria. When absorbed, this is oxidised in the tissues to indoxyl, which combines with the potassium sulphate, forming the above-named substance." Also: "It is not usually increased in constipation, although it may be present in large amount with no other discoverable cause. ..... Though, as a rule, the urine is colourless when passed, there are instances in which the decomposition has taken place within the body, and a blue colour has been noticed immediately after the urine was voided."

Dr. O. J. Kauffmann [2] writes: "Indican is derived from indol, which latter is formed in the intestine by bacterial decomposition of albuminous substances. A very little indican is commonly present even in the urines of healthy persons, but a considerable excess of the same, such as I show you in these specimens, is always accompanied by disturbed general health. We may, therefore, say that excess of indican in the urine is always associated with toxæmia and this toxæmia arises (with rare exceptions, in which the source is decomposing pus) from the intestinal canal."

The interesting points in this case, I think, are: (1) the deep colour of the urine; (2) the fact that it was coloured when passed; and (3) the circumstance that the patient was in good health.

Dorchester.

[2] Transactions of the Pathological Society, 1898.
[3] Ibid.
[4] American Journal of the Medical Sciences, 1904.

A CASE OF APPENDIX RUPTURING DURING AN OPERATION AND AN ANALYSIS OF THE MEANING OF THE SYMPTOMS.

BY F. R. B. BISSHOPP, M.D. CANTAB., M.R.C.P. LOND.,
HONORARY CONSULTING PHYSICIAN, TONBRIDGE UNION INFIRMARY;
AND
JOHN D. MALCOLM, F.R.C.S. EDIN.,
SURGEON TO THE SAMARITAN FREE HOSPITAL, LONDON.

THE subject of the following history was a delicate-looking man of nervous type and 38 years of age. 14 years before the illness now recorded he suffered from an attack of internal inflammation for which mustard was applied to the right lower portion of the abdomen and during the last two or three of the intervening years he occasionally felt a slight discomfort in the same position which, however, never attracted serious attention. On July 9th, 1906, he did not feel well in the evening but had no pain. On the 10th he had breakfast as usual and the bowels acted. Immediately afterwards and throughout the day he felt slight pain along the top of the abdomen and, although getting about, he took no food except a little tea and a biscuit. He went to bed early and, later, had a dose of castor oil which made him vomit. Soon after this, about 10 o'clock at night, he was suddenly seized with intense pain like a hot and heavy ball deep down in the centre of the abdomen but not near the appendix. An alarming state of collapse followed and Dr. Bisshopp was sent for. When he arrived, about half an hour after the attack began, recovery had to some extent

[1] Principles and Practice of Medicine, p. 680.
[2] THE LANCET, July 14th, 1900, p. 75.

taken place, but there was still considerable soreness; the pulse was quick and the temperature was subnormal. A dose of less than an eighth of a grain of morphine was administered and gave relief. This was the only opiate given. On the next morning the patient was free from pain and he slept a great deal that day. He moved about his bedroom during the afternoon and seemed pretty well. In the evening he complained of pain in the appendix region, but no swelling was felt. On the morning of the 12th there were a well-marked protective contraction of the muscles over the cæcum and a slight fulness of the abdomen. After the 10th neither fæces nor flatus passed from the rectum, but there was no vomiting. The highest temperature was 99° F. It was thought that a perforation had occurred and the patient was seen in consultation by Mr. Malcolm at 5 o'clock P.M. on July 12th, 43 hours after the attack of pain and collapse occurred. He was then lying in bed quite comfortably without pain, with a normal temperature and with a quiet pulse beating 72 to the minute. There was a very little fulness of the abdomen and the muscles were less rigid but still resistant over the appendix. There was no defined swelling.

At this time there was nothing to indicate that the patient's condition was a serious one, but it was considered wise to operate at once. The preliminary pain, the acute collapse, the subsequent quiescent state of the intestine, the fulness of the abdomen, and the continued resistance over the cæcum, together with the absence of inflammatory symptoms and of a defined swelling, led us to this decision. Mr. Malcolm thought that the appendix was in part gangrenous. Within an hour the patient was anæsthetised by Mr. G. Roberts and the abdomen was opened. On puncturing the peritoneal sac with the point of a knife a few drops of pus-like matter escaped, and on extending the incision there was a considerable flow of fluid which would be described more accurately as a turbid serum than as pus and which was free in the peritoneal sac. It was not offensive. The appendix lay behind the cæcum and was very lightly attached to some of the surrounding structures by recent adhesions which were separable by a mere touch of the fingers. It was not ruptured when first seen, but the traction necessary to bring it forward caused a drop of opaque whitish material to escape through a small opening in its wall. The rupture evidently took place in consequence of the manipulation. The appendix was removed, and the pelvis, the right loin pouch, and the retro-cæcal region were drained by rubber tubes and gauze tampons, the surfaces of the wound in the abdominal wall being drawn together by sutures as much as the method of treatment would allow. The patient bore the operation well; his pulse was rapid during its progress but soon quieted down after he was replaced in bed.

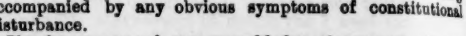
The highest temperature following the operation was 100·6° and the quickest pulse was 90. There was a profuse discharge of serous fluid during the first 30 hours. Between the second and fourth days the drainage mechanism was all removed except a superficial gauze packing. The tube and gauze in the right loin became distinctly offensive, but they were first shortened and then taken out with the others which were free from odour. After about 48 hours flatus began to be expelled from the rectum, the abdominal fulness gradually subsided, and the bowels moved at the end of three days. There was a very decided yellow discolouration of the skin, increasing until the third morning and then passing off. The subsequent history was one of uninterrupted recovery, the skin edges, which at first were necessarily widely apart, being completely healed at the end of six weeks. The most recent accounts of this case show that the patient's health is completely restored. The scar has held very well, especially if the mode of its formation is considered; it only bulges slightly.

After being nearly a month in spirit the appendix had a diameter of just under half an inch in its distal two-thirds, whilst that of the proximal third was a quarter of an inch. There was a perforation about the middle of the thickened portion, nearly as far as possible from the meso-appendix and about a twelfth of an inch in diameter. On slitting up the canal it was seen that its lumen at the junction of the narrow and the thicker part was almost obliterated. The figure is a microphotograph of part of a section showing the perforation. The Clinical Research Association reported that "this appendix shows inflammatory changes most marked around the perforation, less towards the tip, and less still near the cæcal end. Around the perforation all the coats are infiltrated with leucocytes and there is much proliferation of lymphoid elements. At the constriction the mucous membrane seems to have almost entirely disappeared, only one or two patches of lymphoid tissue remaining."

Remarks by Mr. MALCOLM.—There is no doubt that in this case there was an increasing contraction of the lumen of the appendix which probably began as a consequence of a previous inflammation 14 years before the operation. As the canal became almost closed there were attacks of discomfort, hardly amounting to pain, caused by temporary distensions of the portion of the appendix beyond the stricture. These attacks were little noticed, not being accompanied by any obvious symptoms of constitutional disturbance.

Clearly some new factor was added to the case in the illness during which I operated, and the phenomena observed seem to be explained most fully by, and also very strongly to support, the view which I have already advocated[1] that in the appendix, as in the stomach and duodenum, a gangrenous patch may form without any preceding symptoms.

I believe that before this patient felt any pain on July 10th the perforation shown in the figure, or at least the outer



Reproduction of microphotograph showing the perforation in the appendix wall and an obvious loss of tissue.

part of it, was filled with tissue which suddenly became gangrenous. In other similar cases I have discovered such patches *in situ* and unseparated from the living tissues when the abdomen was opened.[2] This change gave rise to no symptom, except a doubtful malaise, until some degree of tension arose within the appendix. Then the traction on the living structures attached to the dead patch caused a definite pain. The dose of castor oil, by inducing movements, straining, and pressure on the appendix, increased the tension within it; the pain consequently became agonising and symptoms of collapse followed. That the pain was not at once referred to the appendix region is a very common observation in these cases. A gangrenous patch does not, however, lose all strength or become separated immediately on its formation, and in the case recorded the recently dead tissue was still of firm texture and intimately attached to the surrounding living structures when the acute attack occurred. Hence a rupture did not then take place. The contents of the appendix partially escaped into the cæcum, as they had always done before, and relief was obtained. The dose of morphine given and the quietness enjoined helped to prevent the development of further evidences of mischief for a time. The pain was comparable to that caused by the act of defæcation when an anal fissure exists. In such circumstances intense pain and even fainting may be induced, but when the stool has passed, in a short time, especially if morphine is given, the pain ceases until the anus is again distended.

When a gangrenous patch develops in a portion of the wall of the intestine micro-organisms must sooner or later pass through it to the peritoneum, and the further history of the illness depends chiefly on the nature of those escaping. In the case above recorded those which found their way into the peritoneal sac induced an exudation that was probably a clear serum at first but was distinctly turbid at the time of the operation and would have become truly purulent later on if interference had been delayed.

The micro-organisms in this particular case were not very injurious, but either those first escaping, or perhaps others of a more virulent type which followed, had a sufficiently

[1] Appendicitis and Gangrene of the Vermiform Appendix considered as Separate Diseases, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix., and THE LANCET, July 28th, 1906, p. 213.

[2] Loc. cit., Cases 7 and 8.

irritating effect to cause a quiescent state of the bowel and a tendency to its distension. Moreover, when the abdomen was opened the gangrenous patch was ready to separate and a rupture did actually occur during the operation. It is therefore certain that, if surgical treatment had been postponed, the evidences of a spreading peritonitis would, in a very few hours, have been much more pronounced, the appendix would have ruptured, and the gravity of the patient's condition would have increased enormously.

The success of the operation and the comparative freedom from danger were mainly due to Dr. Bisshopp's prompt recognition of the necessity for surgical interference. Another very great danger was escaped by the patient's unquestioning decision to follow the advice given. An emergency operation is seldom performed when the immediate symptoms appear so little urgent as they did in this case, and a hesitation to accept the treatment recommended would have been very natural. The patient was urged to acquiescence by a fear of a return of the pain.

The responsibility of recommending operative interference in such cases is often very great, but as our knowledge of the changes taking place increases we shall be able to advise with more precision. The view that in the appendix, as in the stomach wall, a piece of tissue may die and may remain in its normal position for a time without causing symptoms of any kind facilitates the diagnosis by offering a rational explanation of the symptoms, and I operated with the greatest confidence that a gangrenous patch existed in the case under discussion. Without holding this view it is possible to recognise the necessity for operative interference because after similar symptoms rapid death has followed. But when, as in the case recorded, there is an illness of not less than between 50 and 60 hours' duration, at the end of which time a gangrenous patch in the wall of the appendix is found to be just about to give way and when the highest recorded temperature is only 99°, the explanation that the conditions observed are the effects of an inflammation is inadequate. The alleged cause of mischief appears to be absent. It is true that evidences of inflammation were found in the microscopic sections of the appendix, but this tube must have been in a chronic state of irritation for some years on account of the tightening constriction, and the infiltration of leucocytes around the perforation may be fully explained as the consequence of the presence of the dead tissue.

I have published other cases[3] in which a similar absence of evidences of inflammation has been observed in association with a gangrene formation, and if we consider those cases to which the term explosive or fulminating appendicitis has been given much may be said in favour of the view that the illness depends upon a gangrene formation which has caused no symptoms until perforation occurred by separation of the dead part. Such cases are often characterised at first by symptoms of shock and by collapse, which are easily accounted for as the results of perforation but not as those of an acute inflammation. The inflammatory symptoms which do arise later may often be most satisfactorily interpreted as the effects of the presence of a gangrenous patch or of the discharge of the contents of the bowel into the peritoneal sac.

The cause of a gangrene formation in the appendix, as in the stomach, is obscure, but in many cases, as in the one related in this paper, the death of tissue is certainly not due to a sthenic inflammation and is not accompanied by immediate symptoms.

[3] Loc. cit.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Discussion on the Administration of Tuberculin and other Vaccines by the Mouth, together with (a) Normal Saline Solution and (b) Fresh Horse Serum.

A MEETING of this section was held on May 26th, Dr. S. J. GEE, the President, being in the chair.

Mr. E. C. HORT said that Dr. A. Latham, in his paper on the Administration of Tuberculin and other Vaccines by the Mouth, together with (*a*) Normal Saline Solution and (*b*) Fresh Horse Serum,[1] had discussed questions upon which he (Mr. Hort) had been engaged for 12 months in attempting to answer. He ventured, therefore, to contribute to the discussion by briefly referring to his own work on the subject which to some extent confirmed the results arrived at by Dr. Latham. Dr. Latham's investigations, though commenced at a more recent date than his (Mr. Hort's) formed an absolutely independent inquiry of his own. As regards the internal administration of normal horse serum, he had in the last 14 months been directly responsible for the administration of more than 50,000 cubic centimetres in over 150 cases of different diseases, details of which would shortly be published. His experience was as follows: 1. Its action when given internally was more restricted than when applied locally. Its mode of action in the former could at present only be indicated by its more easily observed action in the latter. In that it seemed to combine a stimulant action with the paralysing action that it could be demonstrated *in vitro* and *in vivo* to exert on autolytic and heterolytic enzymes. 2. It might be given by the mouth for weeks in daily doses of from 30 to 40 cubic centimetres with impunity but it must be fresh and sterile and should be given directly after meals during digestion. If those conditions were observed the collapse, serum rash, pyrexia, and other by-effects noted by Dr. Latham would not occur. 3. In such generally infective conditions as pulmonary tuberculosis and pneumonia it was apparently of little value. Dr. Latham's suggestion of giving it with tuberculin might prove of benefit but of that he had had but little experience. 4. If given internally many cases of so-called simple anæmia showed a rapid rise of hæmoglobin and corpuscular content, though in pernicious anæmia it was useless. 5. In hæmoptysis, purpura, hæmophilia, and the hæmorrhage of enteric fever it was often of material benefit. 6. When applied locally in the form of constant dressings in such chronic conditions as local tuberculosis and staphylococcal infections it gave good results. In cases of mixed infection of those two organisms he had found it good practice to attack the staphylococcal infection first by administering the appropriate vaccine by the mouth. 7. In such conditions as chronic gastric and duodenal ulcer, ulcerative colitis, extensive varicose ulcer, bedsore, &c., it was with few exceptions of high value. It might appear that the action of normal horse serum on conditions not obviously bacterial was outside the scope of a discussion on immunity. But one of the many functions of the serum of an individual and of his cells seemed to be the restraint exerted on the autolytic action of his own enzymes. In many lesions—as, for example, in all kinds of ulceration not primarily dependent on bacteria—the phenomena of ulceration might be due to an absence of such restraint: in other words, to a breakdown in the mechanism of immunity against such enzymes. It was beyond dispute that the normal serum of many animals, including man, and notably of the horse, had strong antitryptic and anti-autolytic power. By administering serum, as in the cases referred to, they were, of course, merely transferring that protective body to the seat of cell destruction. The clinical effects were significant and might explain many hitherto unexplained diseases, of which non-bacterial ulcerations of all kinds seemed to be a good example. In bacterial lesions the effect of the serum appeared to be, amongst other things, stimulation to repair and inhibition of bacterial proteolysis. This antitryptic power of serum was becoming well known. The work of Cathcart, Baer, and later Koltschmann and Müller showed that the anti-enzyme was tied to the albumin fraction: It appeared from the work of Dr. F. L. Golla that its inhibitory power underwent variation in different diseases. The satisfactory results which he had obtained with normal serum in many forms of proteolytic cell destruction had led him to attempt to get a serum prepared with this antitryptic power increased. In that he owed much to the work of Martin at the Lister Institute and to Dr. Golla who informed him that serum so prepared had a high antilytic valency. It might be prepared in two ways, either by subtracting from serum the globulin moiety, which favoured proteolysis, or by increasing the relative amount of albumin present. Such had now been prepared and the difficult problem of at the same time preserving the stimulins had also been apparently solved. The serum stripped of its globulin he had labelled antilytic serum A; the serum in which albumin content had been increased and inwhich the globulins had been left

[1] THE LANCET, March 28th, 1908, p. 934.

intact with the stimulins and other antibacterial bodies he had designated antilytic serum B. The first was for internal use; the second for local. As regards the oral use of tuberculin and other vaccines by the mouth he had only the evidence of some 20 recent cases of his own, mainly of staphylococcal infection, to offer. These included cases of pustular eczema, suppurating sinuses and infected ulcers of the tongue and mouth, and a few of surgical tuberculosis. He had treated most by vaccines by the mouth and local applications of serum. At present he could only say that the results were encouraging.

Dr. HECTOR MACKENZIE said that with regard to staphylococcic infections he was satisfied that they had in vaccine treatment by the mouth a powerful remedy and he had seen the most remarkable results in long-standing cases. Concerning the administration of tuberculin he was still in doubt. He had seen similar results from other methods of treatment in cases like those described by Dr. Latham. Until they had a considerable number of cases treated by tuberculin they were not justified in drawing conclusions. His impression from the cases of tuberculosis of the lung under his care treated by tuberculin and serum was that favourable results were not observed in those cases which had not been doing well before the tuberculin treatment was started. He had treated a number of cases of tuberculous glands with tuberculin given three times a day by the mouth. The glands softened and became smaller and gradually subsided. He considered that in pulmonary tuberculosis much work had to be done before the matter was understood. The results were encouraging and the treatment was worthy of further trial, so that the best time to give tuberculin might be settled and the proper dose. Observations as to the relation of the opsonic index to the temperature were of value, because if the treatment depended on observations on taking the opsonic index then the progress of the method would be impeded, for it would be impossible to regulate the treatment by opsonic index only.

Dr. A. G. AULD thought that the cases brought forward by Dr. Latham were too few and inconclusive; they did not furnish any reliable guide for the medical practitioner.

Dr. H. D. ROLLESTON said that from what he had seen at St. George's Hospital there was a great future for the treatment. He described cases of gastric ulcer in which horse serum by the mouth had been successful, but he contended that though there was no doubt that horse serum did stop hæmorrhage nevertheless the serum should be standardised.

Dr. H. J. JOHNSTON LAVIS said that the successful treatment of tuberculous patients by means of meat juice might be explained by the fact that tuberculous meat had been accidentally selected.

Dr. S. VERE PEARSON related a case of a patient who had tuberculous disease of the right kidney in which since tuberculin had been given by the mouth the patient had been much freer from pain than before the treatment and the general condition had improved. He described another case of spinal caries in which relief from pain had been afforded by the treatment. He narrated the details of a case in which there were acute signs of pulmonary tuberculosis and in which for six months there had been constant fever that persisted in spite of every remedy being tried, but when the patient was given tuberculin and horse serum the temperature fell within three weeks' time and the pulse-rate became lower.

Mr. W. STUART-LOW said he thought that he would not be contradicted when he claimed to have been the first to employ fresh animal blood serum locally in the treatment of wounds. He had first used it at the Central Nose, Throat, and Ear Hospital as a dressing in the radical mastoid operation in a series of cases of chronic suppuration of the middle ear. This was two years ago, and in THE LANCET of May 4th, 1907, he had published a preliminary account of his results. This horse serum was supplied by Messrs. Burroughs, Wellcome, and Co., except in his earlier series of cases in which he had used serum obtained from the butcher, when the serum of lambs and sheep was employed. He now made use of fresh horse serum in a routine way in mastoid operations. The results had been very good and gratifying to the surgeon and the patient, as in this way the average time that the patients were detained in the hospital had been shortened to five days. With horse serum as a dressing the most fœtid and septic cases could have a thorough and extensive operation performed, and the risks of dangerous sequelæ such as septic meningitis could be minimised. His practical experience with horse serum led him to believe that there was a great future for it in surgery, and particularly in ear surgery.

Dr. LATHAM, in reply, said that it had been proved that animals could be immunised by feeding them on an emulsion of dead tubercle bacilli provided it was administered on an empty stomach but if given with food no immunity resulted. That was conclusive that it was not right to give vaccines together with food. As far as the opsonic index could be taken as a guide, better results were secured by giving serum on an empty stomach than with food. In his opinion the cases referred to by Dr. Mackenzie in which the results of the treatment were not satisfactory were cases in which it would have been a miracle if a cure had taken place. He admitted that in those cases where coughing caused auto-inoculation the treatment did not show the satisfactory results described in the cases which he had put forward. Answering a question from Dr. R. H. Hodgson, Dr. Latham said that in regard to the relation between exertion and the temperature in phthisical cases there was no doubt that exertion produced a rise in the temperature if undue auto-inoculation occurred. It was possible to treat phthisical patients by exercises and to utilise their own auto-inoculation to secure immunity, but the amount of exercise permitted had to be regulated carefully according to the temperature. In cases of acute pulmonary tuberculosis for the opsonic index to be of value it ought to be taken three or four times a day. In cases of chronic pulmonary tuberculosis he considered that the treatment could be carried out without the opsonic index, for in those cases the opsonic index could be gauged by a consideration of the clinical symptoms and the temperature of the patient.

ODONTOLOGICAL SECTION.

Extraction of an Upper Wisdom Tooth.—Pyorrhœa Alveolaris.—Heredity and Dental Disease.

A MEETING of this section was held on May 25th, Mr. J. HOWARD MUMMERY, the President, being in the chair.

Mr. W. RUSHTON gave as a communication Some Notes on the Extraction of an Upper Wisdom Tooth.

Mr. J. G. TURNER read a paper entitled Clinical Notes on Pyorrhœa Alveolaris. He found that clinically fully 50 per cent. of cases of pyorrhœa were furthest advanced in the molar region—i.e., it had commenced in that part. He had noted in the mouths of people who used their toothbrushes pyorrhœa absent at the labial gum margin of incisors, canines, and premolars, but well advanced elsewhere, where the toothbrush less readily reached. In respect of its point of origin, pyorrhœa was clinically a dirt disease, like dental caries, the dirt being bacteria with or without food débris, and stagnation being its complement. The general age of onset, early adult life, was a point rather against Mr. Goadby's milk-borne theory, since raw milk was then but little drunk. Mr. Turner drew attention to the fragility of the affected teeth, which led to an unusually large average of fractured apices in extraction of pyorrhœic teeth. The possible relationship of acute pyorrhœa and ulcerative stomatitis was alluded to.

Mr. STANLEY P. MUMMERY read a paper on Heredity and Dental Disease. He first dealt with the neglect shown by the medical profession generally towards the important subject of heredity and stated it as his belief that dental caries in common with many other diseases owed its origin as well as increasing prevalence to hereditary factors. The pathology of dental caries had already been worked out by the late Dr. W. D. Miller, but its etiology still remained obscure. Disease in general was to be regarded as an undesirable variation from the normal, and as such was kept in check by the law of the survival of the fittest and consequent elimination of the unfit, including those susceptible to disease. In this way a race was gradually rendered immune to a particular disease to which it might become exposed. Dr. Archdall Reid had written on this subject and had shown how in the case of malaria races which had long been exposed to its infection, such as the West African negroes, had become gradually immune to the disease, not owing to the inheritance of acquired immunity, but owing to extermination of the more susceptible individuals, breeding only taking place among those who were less susceptible and who therefore survived. Among civilised races, however, this selective action of nature was prevented by modern science from exerting any influence on certain diseases, such

as insanity and dental caries. In the case of insanity the insane were now treated with such skill that a large proportion recovered sufficiently to leave the asylums, when they could marry and have large families, many of whom inherited this insane diathesis; thus the real increase of insanity in modern times was the same with dental caries. Owing to the soft, easily-digested food of modern diets the full set of teeth was not necessary for mastication. Hence defective and carious teeth did not affect the individual to the extent of preventing him from having large families, as would be the case with savage men living on hard food needing thorough mastication. Thus by the absence of the action of natural selection and the consequent breeding among the unfit the number of susceptible individuals rapidly increased until now nearly every child was born of susceptible parents. The main cause of the modern increase of dental caries was therefore due to the increasing susceptibility in the teeth themselves, which was the fault of the absence of the action of natural selection in weeding out the more susceptible individuals.—Mr. F. J. BENNETT, Dr. J. SIM WALLACE, Dr. NORMAN G. BENNETT, Mr. K. W. GOADBY, and Mr. H. BALDWIN took part in the discussion.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A MEETING of this society was held on May 20th and partook of the nature of a dermatological cliniqne, Dr. JAMES RITCHIE, the President, being in the chair.

Dr. NORMAN WALKER gave a *résumé* of his work in the skin department of the Royal Infirmary during the last 16 months with special reference to groups of interesting cases and to those subjects at present attracting most attention. The experience of the department showed that Alopecia Areata was exceptionally prevalent in Edinburgh but the statistics required much more prolonged examination than he had yet been able to give them for coming to any conclusions as to possible epidemics of this disease. It was, however, remarkable that compared with the available statistics of London and Glasgow the proportion of cases of alopecia in Edinburgh was very distinctly greater. He brought before the meeting a small detachment of the many cases of Favus at present under treatment with the view of demonstrating how hopeless it was to expect satisfactory results in those placed in the social circumstances of the patients and he hoped that the matter would be taken seriously up by the new medical officer of health of Edinburgh. The disease was very common in Edinburgh; while it was easily cured amongst the better classes it was really a terribly incurable disease in the lower classes. Cases often required treatment during three or four years, and in one case the hair of the scalp had been removed by x rays on eight occasions in an endeavour to cure the disease. His statistics of Herpes Zoster showed quite clearly the epidemic nature of this disease, though the numbers were probably misleading, as many cases were treated in dispensaries, at home, and in the medical waiting-room. Impetigo showed striking variations, as was indeed to be expected with so eminently contagious a disease. Lupus Erythematosus occurred in the proportion of 1 per cent. of his cases. The most interesting fact to record in connexion with this was the reaction to Pirquet's method of vaccination with tuberculin. He had only recently had the opportunity of trying this, but in three cases of lupus erythematosus one showed the reaction and the other two were definitely negative. He said that he had not time to go into the matter, but these facts were interesting to those who maintained that lupus erythematosus was not a tuberculous disease. He next demonstrated a number of cases of Lupus Vulgaris which had been under treatment in the skin department for many years and claimed that in all forms of treatment the most essential element was perseverance. The administration of thyroid gland extract helped in the removal of the complications of lupus but it did not of itself cure the disease. He showed one case and a cast of another of Lupus Cancer. Both had been treated by erasion and the application of caustics with apparently complete success, and in one case a limb was saved to a young woman. He remarked that he believed that the disrepute into which the caustic treatment of carcinoma had fallen was due to timidity in its use. It was generally taught that carcinoma which occurred in young persons was of special virulence but he had not found this to be the case in those patients who suffered from lupus carcinoma. Nearly all of the patients who suffered from Molluscum Contagiosum attended one of the Edinburgh public baths. He demonstrated one case and a number of casts by Dr. Low or his assistant of Ringworm of the Nails, five cases of which had come under his notice in the last four months. Some of these had been unrecognised during many years and none had any evidence of the disease on the body. Of the 2500 cases with which he was dealing 62 had been cases of Rosacea. He referred briefly to his belief that this disease was generally seborrhœic in origin and that indigestion did not play the all-important part which many attributed to it. Careful inquiry was made in each case and only five of them were noted as suffering from indigestion, while in seven others there were headaches, constipation, and the like noted. He demonstrated a very satisfactory case from this point of view in the person of the patient who formed the subject of the illustration in the new edition of his book and who after two months' treatment showed no sign of the disease. In dealing with Sycosis he gave his experience of the vaccine method. He demonstrated the case of a man who had been treated by ordinary methods without success and who had been threatened with loss of his employment but who had almost entirely recovered under injection of vaccine prepared from his own staphylococci. In this connexion he referred to the use of tuberculin in lupus which he had found most valuable. The number of cases under his care made it impossible for the index to be taken in each, but he had found that a dose of 1-15,000th of a milligramme every four weeks had been followed by excellent results. He briefly referred to the number of cases of ringworm, 200 out of the 2500 cases, and while admitting the merits of the new x ray treatment he had not found that it was so invariably successful as had been sometimes claimed. Lastly, he demonstrated the cast of a case of Actinomycosis as it appeared when it came under his care six months ago; the patient had entirely recovered under the administration of very large doses of iodide of potassium.

Dr. F. GARDINER showed several cases which were chiefly noteworthy from the point of difficulty in diagnosis. 1. A girl, aged 18 years, who suffered from what at first glance appeared to be a typical Pityriasis Rosea, the patches being slightly raised, scaly, and salmon coloured. The lesions were situated on the front and back of the chest and trunk but there was no Herald patch, and in addition the limbs were affected, whilst the scalp showed dry seborrhœa, while two favourite seats of seborrhœa (behind the ears and in the axillary folds) were sites of the eruption. In spite of a recent history (14 days) and no previous attack he inclined to the diagnosis of seborrhœa. 2. A case of Erythema Multiforme simulating secondary syphilis. It had occurred two months after the appearance of the primary sore, one week after the administration of mercury up to the limit of salivation, and it had continued a fortnight after the administration of the mercury had been given up. The eruption was itchy and affected the arms, the legs, and the face. Salicin was recommended. 3. A case of Erythema Scarlatiniforme, universal and coming on one month after stopping the use of copaiba for gonorrhœa. It had all the characters of a drug rash. 4. A case of Favus of the Scalp closely resembling tinea, and in which there were broken hairs, grey scales, no scutula and no mousy odour. It was diagnosed by the microscope. 5. A patient who had been x-rayed four years previously for Tinea Capitis. Complete epilation had then occurred and there was a splendid growth of hair now present. She had developed a fresh attack, but this was of the large-spored type. 6. The mother of this last child suffering from typical Alopecia Areata. Microscopic examination had shown no trace of fungus. 7. Alopecia of the Scalp and Scarring of the Face following on a recent attack of small-pox. 8. Four cases of Rodent Ulcer under X Ray Treatment.

Dr. R. CRANSTON LOW exhibited: 1. A case of Pemphigus Foliaceus in a woman, aged 53 years. The disease had commenced 11 years ago and at first the eruption closely resembled dermatitis herpetiformis. Three years ago the affection became generalised and exfoliating. The general nutrition was good. The patient had been treated with a vaccine made from the contents of the blebs and with a marked improvement. 2. A case of Early Mycosis Fungoides in a woman, aged 52 years. The eruption had commenced on the palms and soles 14 months ago and resembled a case

of psoriasis. Since this time numerous red, scaly points had appeared until nearly the whole of the body was affected. About a month ago, on the backs of both feet, small tumour-like masses had appeared. The patient was being treated by the x rays. 3. Kerion of the Scalp due to the small spore fungus in a boy. 4 A case of Rupia which was under the care of Mr. Alexander Miles in the Lock wards. The eruption showed the typical limpet-shaped crusts. On the face there were other crusted and oozing lesions as well as on the body and limbs. The patient's husband had been treated in the Lock ward in December, 1907, for a primary sore.

Dr. J. S. FOWLER showed a case of Urticaria Pigmentosa in a child.

Mr. HENRY WADE demonstrated (1) a remarkable case of Hyperkeratosis Plantaris from a lunatic patient, and (2) a case of Mycetoma.

Reviews and Notices of Books.

A Manual of Venereal Diseases. By Officers of the R.A.M.C. Oxford Medical Publications. London: Henry Frowde, Oxford University Press; and Hodder and Stoughton. 1907. Pp. 282. Price 5*s.* net.

THIS work gives an account of the information contained in the reports made to a sub-committee appointed by the Army Medical Advisory Board to consider the question of treatment of venereal disease in the army. It is intended to act as a convenient manual for the use primarily of the army medical officer to assist him in his daily work in the prevention and treatment of venereal disease. Sir Alfred Keogh in his introduction, after alluding to the effect of improved hygiene on the gradual decline of venereal disease in this country, as contrasted with the absence of this decline in India and the Colonies, where sanitary control is more difficult and complicated, alludes significantly to the low incidence of these affections in continental armies, which he rightly says is due mainly to systems of legislative control, and he points out how the two great Anglo-Saxon States, whose attitude to legislative control is similar, have a far larger incidence of venereal disease in their armies than any other country. A striking instance of this occurred not many years ago in one of our hill stations in India. Here a diseased prostitute was living in a hut about ten yards outside cantonment limits. She was visited daily and infected daily the soldiers of the garrison, yet at that time nothing could be done by the officer commanding the station.

Lieutenant-Colonel C. H. Melville, R.A.M.C., contributes the section comprising the history, statistics, and invaliding from venereal diseases. Taking the troops stationed in the United Kingdom, there has been a steady fall in the invaliding-rate for syphilis since 1902, due probably to the introduction of the treatment by the injection of mercury, with which the name of Colonel F. J. Lambkin, R.A.M.C., is so honourably associated. Thus since 1905 no men of the Brigade of Guards have been invalided for syphilis since this method was practised. With regard to the army in India we find an increasing rate of admissions from 1880 to 1888, the year in which the Contagious Diseases Act was abolished in India. Then the admissions rapidly increased, attaining their maximum between 1894 and 1896, since when the fall has been rapid and continuous, due to the introduction of the Cantonment Act of 1897. Lieutenant-Colonel Melville gives a *résumé* of the measures adopted by the various foreign countries to cope with this evil and the more stringent rules in these countries are shown by a comparative statement of the incidence of venereal diseases in the several armies to effect their purpose admirably; for example, the admission per 1000 in the German army in 1900 was 17·8 as contrasted with 93·4 in the British.

The subjects of clinical pathology and bacteriology are contributed by Colonel W. B. Leishman, R.A.M.C. The history of the research for the micro-organism is admirably given, the account of the spirochæta being one of the best in the English language. Major C. E. Pollock has contributed the section on the clinical course and treatment. He considers the following practical points as regards (1) the commencement of treatment, which he holds should be instituted as soon as, but not before, the diagnosis of syphilis has been made; (2 the period for the administration of mercury is considered to be two years, provided it is thoroughly carried out; (3) the general scheme of treatment, whether continuous or intermittent, the latter being held to be the most advantageous in the case of the soldier; and (4) the methods of administering mercury, whether by the mouth, by the skin, or by injection. The last is undoubtedly the best from an army point of view, and as this is the case the reader will find its technique laid down with precision as regards all its parts.

The volume concludes with the subjects of soft chancre and gonorrhœa and has several valuable appendices. In conclusion, we can say that this manual admirably fulfils the purpose for which it was compiled.

American Practice of Surgery: A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors: JOSEPH H. BRYANT, M.D., LL.D., and ALBERT H BUCK, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume III. New York: William Wood and Co. 1907. Pp. 775. Price $7.

THE third volume of this elaborate system of surgery deals with the important subjects of injuries and diseases of bone and injuries and diseases of joints, in addition to a comparatively short section on poisoned wounds, including the bites and stings of animals and insects. This section on poisoned wounds treats of many animals the likes of which are not met with in this country but the accounts are good. Erysipelas comes next. The author, Major C. F. Mason, surgeon in the United States Army, holds that the streptococcus erysipelatis is identical with the ordinary streptococcus pyogenes; but he gives no hint that in recent years a differentiation of various species of streptococci has been possible and that in all probability the streptococcus of erysipelas is specifically distinct, even though it is capable of causing septicæmia. Accounts of various infected wounds follow, such as anthrax, tetanus, and actinomycosis; they need no comment. Dr. G. G. Rambaud of New York has contributed the article on Hydrophobia; it is very good and an excellent plate showing "Negri bodies" is given.

Dr. Duncan Eve of Nashville has written the section on Fractures. In the description which is given of Colles's fracture no mention is made of the fact that skiagrams have shown that in a large proportion of the cases there is also a fracture of the neck or styloid process of the ulna. It is useless to say (p. 131) in speaking of the treatment of fracture of the shaft of the humerus "Middeldorpf's triangle and Vulpius's aluminium splint are often applied in Germany for fractures of the shaft of this bone," without any account of these splints. Middeldorpf's triangle is certainly worthy of a fuller description as many surgeons consider it to be the best form of treatment for this fracture. Dr. T. Turner Thomas of Philadelphia has supplied the article on Pseudarthrosis and the various modern methods of treatment are detailed. The article on Inflammatory Affections of Bones is by Dr. George A. Peters of Toronto, and that on Non-Inflammatory Affections of Bones is by Dr. Roswell Park of Buffalo; both are excellent. Dr. J. Shelton Horsley's paper on Syphilitic Disease of Bone seems to be complete and the treatment is judicious. The following sentence, however, may be easily misunderstood: "The best ointment is one prepared from the following formula: Compound tincture of benzoin ℥ss.; mercury and lanolin each ℥j." It is highly

probable that the author intended to write "mercury ointment" in place of "mercury."

Tumours originating in Bone are dealt with by Dr. Channing C. Simmons of Boston, Massachusetts, who supports the idea that ivory exostoses arise from persistent fragments of the chondrocranium, though no cartilage is ever found in connexion with these exostoses. He gives no reason why they should not arise from the periosteum, by far the most probable source. The article is very good and is well illustrated. We are glad to see that an account is given of echinococcus disease of bones, for many text-books hardly mention it. The name of the collector of cases of this disease should be Targett, and not Taggett.

Dr. C. F. Painter of Boston has undertaken the subject of Chronic Non-tuberculous and Non-traumatic Inflammations of Joints. He has given a very good account of the atrophic and hypertrophic forms of arthritis. It seems a pity to call "loose bodies" in a joint "foreign bodies," for it leaves us with no convenient name for a true foreign body in a joint. Syphilis of joints is a subject often much neglected; it is well treated here. Dr. Alexander Primrose of Toronto has contributed the article on the very important subject of Tuberculous Diseases of Bones and Joints. It occupies more than 160 pages and is quite a treatise on the subject. Especially good are the sections on treatment, for they are very practical. The concluding chapter in this volume is on Wounds of Joints, by Dr. John C. Oliver of Cincinnati. Dr. Oliver includes all forms of injury under the title "wounds." He speaks of washing out an infected knee-joint but he does not tell the reader what solution should be employed.

Handbuch der Tropenkrankheiten. (*Handbook of Tropical Diseases.*) With contributions by Dr. A. BAELZ, Fleet-Surgeon P. W. BASSETT-SMITH, R.N., Dr. P. VAN BREBS, Dr. C. L. VAN DER BURG, Dr. A. CALMETTE, Dr. CARROLL, Dr. A. EYSELL, Dr. D. DENNIG, Dr. P. KRAUSE, Major W. B. LEISHMAN, R.A.M.C., Professor Dr. A. LOOSS, Dr. MAX LÜHE, Dr. W. G. MACCALLUM, Dr. L. MARTIN, Dr. K. MUIRA, Dr. A. PLEHN, Dr. R. PÖCH, Dr. F. RHO, Dr. R. RUGE, Dr. TH. RUMPF, Dr. L. SANDER, Dr. A. VAN DER SCHEER, Dr. K. SCHILLING, Professor Dr. G. STIEKER, and Dr. H. ZIEMANN. Edited by Dr. CARL MENSE. Third volume. With 315 illustrations. Leipsic: J. A. Barth. 1906. Pp. 818.

THIS is the third and concluding volume of this admirable treatise on tropical diseases, the two former volumes of which we have already reviewed. Judging from the names of the authors of the various chapters the reader will be led to expect articles of no ordinary value. Nor will he be disappointed. The three volumes of Dr. Mense's "Diseases of the Tropics" constitute indeed the most valuable treatise on tropical diseases extant. To Dr. R. Ruge is intrusted the subject of amœbic dysentery. Herein the student will find the characteristics of the various amœbæ succinctly described and illustrated with beautiful plates: the pathological anatomy and symptomatology are exhaustively given together with the treatment. Dr. W. G. MacCallum treats of tropical liver affections, of congestion and suppuration. The author believes in the connexion between dysentery and liver abscess. The localities into which the latter may burst are noted and a good description is given of the symptoms. We fail, however, to find any mention of the excellent method of treatment, that has proved so serviceable, instituted by Sir Patrick Manson. Dr. Max Lühe writes of the effects produced by the various protozoal organisms, the section on the trypanosomata being the most complete exposition with which we are acquainted. The whole subject is dealt with in 200 pages and is illustrated by some very artistic plates. Dr. Hans Ziemann writes on malaria; in the historical description of the discovery of the cause of this affection Professor Ronald Ross, we think, does not receive sufficient credit. An excellent plate is given portraying the evolution of the parasite. This article includes all that is known up to date, whilst the various methods of treatment are fully described. It is enriched by a full bibliography and by excellent drawings. Blackwater fever is described by Dr. Ziemann. The author holds that this disease depends on two factors—first, the presence in the patient of a disposition developed after a longer or shorter infection with malaria, and, secondly, the presence of certain factors provoking it, such as malaria alone, malaria plus quinine, quinine alone, or any condition impairing the resistance of the body. In the treatment the author states that the main considerations are to keep up the strength of the circulation, to remedy the tendency to suppression of urine, and to stop the hæmocytolysis. Our own countryman, Major W. B. Leishman, R.A.M.C., treats of kala-azar, a subject on which he is a well-known authority. The various views of this affection are given and the characteristics of the Leishman-Donovan organism are described and well illustrated. Dr. C. Mense describes trypanosomiasis and sleeping-sickness. This article leaves nothing to be desired and is accompanied with some excellent plates. Dr. F. W. Mott's researches and discoveries of the part played by the central nervous system are duly chronicled. Relapsing fever is described by Dr. C. Schilling and the description is fully up to date. The ornithodorus moubata is shown in a very good illustration. Dr. L. Sander and Dr. Hennig write of the glossina morsitans and the stomoxys and of nagana, of surra and dourine, piroplasmosis, African coast fever, South African horse sickness, and rinderpest, amongst other subjects. Dr. Filippo Rho treats of psittacosis and the volume concludes with a well-written chapter on the less known tropical diseases by Dr. Mense.

We have read the concluding volume of this treatise with much instruction and pleasure. It is certainly the mos comprehensive work on tropical diseases yet published and should find a place in the library of every student of those diseases.

The Townsman's Farm. By "HOME COUNTIES." London, Paris, New York, Toronto, and Melbourne: Cassell and Co., Limited. 1908. Pp. 293. Price 6s. net.

THIS book is written by one who undoubtedly knows his subject well and who marshals his facts regarding farm life in its various aspects in an interesting and instructive manner. The first two chapters endeavour to show that the skill and ability of the farm labourer and the farmer are greatly underrated by the ordinary city dweller. "The Townsman's Farm" proves clearly that neither is Hodge a fool nor the farmer a blockhead. It is demonstrated that the good farm labourer is a remarkably able "handy man." As an apt illustration of the truth of this statement, the difficulties encountered in properly ploughing heavy land are pointed out, which it is asserted are as great as those of holding a boat's head to the wind in a sea. A comparison is made between a skilled farm labourer and a city bank clerk in favour of the former, not only so far as physique and staying powers are concerned but also as regards the value of his knowledge and experience. While we cannot but agree with most of the author's conclusions as to the efficiency of the farm labourer and the farmer and of the healthfulness of the lives led by both, it may be doubted whether the present-day labourer is quite so useful an all-round man on a farm as was his forefather. Again, in regard to the healthfulness of his life it is to be remembered that many of the cottages inhabited by farm labourers are overcrowded, ill-lighted, badly ventilated, and inadequately drained, oftentimes with a defective if not infected water-supply. The author is bold enough, as we

have already pointed out, to hold up "Hodge" to comparison with the "typical bank clerk," to the "very possible advantage" of the former in "natural wit, acquired skill, and knowledge that a man sets store by at 60." We cannot follow him so far as this but are very ready to admit that to call a farm labourer an unskilled man is to proclaim a deep ignorance of the nature of his work.

The main object of the book, however, is to try to teach the townsman how to proceed when he desires to get "back to the land." The obstacles in his path are by no means minimised. He is told that he must first shed himself of his conceit and approach his task in a humble spirit. All the avenues which lead to farming are dealt with concisely but to the point. The agricultural colleges are discussed at some length, and the "fors" and "againsts" of this mode of learning the farming business are well set forth. The question of small holdings, a burning question of the day, is adequately reviewed. To emigration and colonial farming are devoted several pages, all of which appear to contain sound common sense and wise advice. Indeed, every phase of farming comes under brief notice.

A welcome note of optimism pervades the book throughout. The position of the British farmer is not painted in the black colours which are so usually employed, and it is refreshing and healthy in itself to have the opinion of an authority that there is a fair chance of success for the overworked and debilitated townsman not only in our colonies but even in Great Britain if the matter be grappled with determination and energy. At any rate, the gain to the individual from leading a strenuous life of hard work on the soil is too obvious to need emphasis and the townsman who is anxious so to do will find in these pages admirable advice for his guidance.

Atlas and Text-book of Human Anatomy. Vol. III. By Dr. JOHANNES SOBOTTA, Professor of Anatomy in the University of Würzburg. Edited, with additions, by J. PLAYFAIR MCMURRICH, A.M., Ph.D., Professor of Anatomy in the University of Toronto; formerly Professor of Anatomy in the University of Michigan. London and Philadelphia: W. B. Saunders Company. 1907. Quarto, pp. 342. Price 25*s.* net.

THE third and last volume of this Atlas is devoted to the remainder of the vascular system, the entire nervous system, and the organs of special sense, with the exception of the tongue and larynx, which were fully described in Vol. II. The mode of reproduction of the dissections is identical with that employed in the preceding volumes—viz., multicoloured lithography, autotype, and the three-colour process, while in conformity with the author's aims the text has been judiciously curtailed in order to produce a useful book for the student and the physician, rather than an atlas for the finished anatomist. The illustrations, all of which are faithful reproductions of actual dissections, are beautifully executed and show at a glance the relations of arteries, veins, and nerves, both to each other and to adjacent structures. The portion of the book devoted to the vascular system is divided into two sections dealing first with the arteries and secondly with the veins. This arrangement applies to the text rather than to the illustrations, for, whenever possible, the picture is a composite one of arteries, veins, and nerves. This commendable plan should be much appreciated by the student who requires a complete picture of a dissection rather than a view of a solitary vessel or nerve in a framework of muscle or bone. Where there are so many beautiful plates it is extremely difficult to single out any particular ones for distinction but we certainly think that those depicting the vessels of the head and neck and the pelvis are deserving of the highest praise.

The nervous system is treated in a very thorough manner. Commencing with the spinal cord and the brain, the author passes on to the cranial nerves, the spinal nerves and plexuses, and concludes with a description of the sympathetic system. Again in this section the text is more than amplified by a splendid series of drawings depicting sections and surface views of the brain and dissections of the nerves and plexuses, all of which give the reader a very clear idea of these important structures. The concluding chapters devoted to the eye and the ear contain a complete and accurate description of these organs and, as might be expected, are copiously illustrated.

We have nothing but praise for the work which, as an atlas, surpasses anything of its kind which we have yet seen and we wish it the success which it undoubtedly deserves.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Vol. I. No. 1 (October, 1907), No. 2 (January, 1908), and No. 3 (April, 1908). Oxford: At the Clarendon Press. Subscription 25*s.* per annum. Single numbers 8*s.* 6*d.* net.—This new medical contemporary is edited by six eminent physicians—Professor William Osler, Dr. J. Rose Bradford, Dr. A. E. Garrod, Dr. R. Hutchison, Dr. H. D. Rolleston, and Dr. W. Hale White. They will have the assistance of several colleagues, amongst whom may be mentioned Sir R. Douglas Powell, Professor T. Clifford Allbutt, Dr. J. K. Fowler, Dr. Byrom Bramwell, and Dr. Norman Moore. The journal will be conducted on the lines of the *Journal of Hygiene* or the *Zeitschrift für Klinische Medicin* and will be devoted to the publication of original papers dealing with clinical medicine. It will also include critical reviews on special subjects and diseases, but with this exception the journal will be entirely concerned with original communications. The publication will form the official organ of the Association of Physicians of Great Britain and Ireland, bearing the same relation to that body as the *Journal of Physiology* bears to the Physiological Society. Having these objects the new journal is likely to advance the interests of British medicine throughout the world and will, it is hoped, tend to make advances in medicine made by British physicians more extensively known amongst foreign nations than at present appears to be the case. The first number contains several communications of considerable interest. Dr. James Mackenzie contributes an article on Abnormal Inception of the Cardiac Rhythm. He considers a class of cases in which a very prominent and easily recognised symptom is a continuous irregularity of the heart's action. Clinically, these cases are found under two conditions: first, in the later stages of mitral disease, especially of mitral stenosis; and secondly, in those cases of irregular heart action so common in advancing years and usually associated with arterio-sclerosis. He further considers that a consideration of these cases is of the highest importance in affording a key to the pathology of the irregular heart. He contends that in such instances the normal sequence of the heart's contraction no longer prevails, that the ventricles alone may contract, or that the auricles and the ventricles contract simultaneously. As a deduction from the facts proving this proposition he suggests that the stimulus for contraction arises no longer from the usual place at the mouths of the great veins but at the *a-v* node described by Aschoff and Tawara situated at the auriculo-ventricular junction. Amongst other papers in this number dealing with the circulatory system are a Note on a Ready Method of Measuring the Venous Pressure without a Manometer, by Dr. George Oliver; and a Clinical Sphygmomanometer yielding Absolute Records of the Arterial Pressure, by Dr. A. G. Gibson.——No. 2 contains a careful paper upon the Pathology of the Cerebro-spinal Fluid derived from Lumbar Puncture, by Dr. J. Graham Forbes, based on 140 cases examined at the Great Ormond-street Hospital for Sick Children during the last

three years. Dr. C. Rolleston contributes a Study of Certain Reflexes in Scarlet Fever, which contains some interesting clinical observations, especially that which records the temporary replacement of the flexor by the extensor plantar reflex in severe cases of the disease. Dr. James Mackenzie writes on the Extra-Systole: a Contribution to the Functional Pathology of the Primitive Cardiac Tissue, in a careful and learned paper in which he adduces evidence in favour of attributing the origin of extra-systoles to affection of the remains of the primitive cardiac tube. Dr. David Forsyth contributes an admirable first part to an essay upon the Parathyroids, dealing in this paper with their function and relation to the thyroid gland, of which we gave an account in THE LANCET of Feb. 29th, 1908, p. 659. Dr. Alexander G. Gibson contributes a study upon the Action of Digitalis on a case of Morbus Cordis, with many illustrative cardiograms, in which he observed the effect of the drug on four of the primary functions of cardiac muscle, and he also writes on the Heart in a case of Stokes-Adams Disease. Dr. Lewis Jones writes upon the interesting question of Cervical Ribs and their Relation to Atrophy of the Intrinsic Muscles of the Hand; and Dr. J. H. Drysdale and Dr. W. P. Herringham upon an Undescribed Form of Dwarfism with Spatulate Hands, a paper illustrated by reproductions of striking photographs. A beautiful colour plate illustrates a case of Ochronosis, reported by Mr. Edgar Reid, the clinical features being described by Professor William Osler and the urine by Dr. A. E. Garrod. The number is concluded by a Critical Review of Recent Work on Mediterranean Fever by Dr. J. W. H. Eyre who is admirably qualified to undertake such a contribution.——The first article in No. 3 is by Dr. F. J. Poynton who has done much to advance our knowledge of the subject of rheumatism. The present contribution deals first with the question of the frequency of acute rheumatism in children under five years of age. Some have maintained that acute rheumatism is very rarely if ever seen under the age of five years. Dr. Poynton has collected 52 cases in children under five and his paper is based on a study of these cases. The mortality was high. Eight cases died and five more were in a hopeless condition. 22 made partial recoveries with permanently damaged hearts. In seven out of the eight fatal cases a terminal pericarditis was present but the disease was unmistakeably rheumatism. In order to show the differences between these cases of rheumatic pericarditis and suppurative pericarditis from other causes, Dr. Poynton has collected and analysed 100 cases of suppurative pericarditis in childhood, the great majority of which were pneumococcal in origin. Eight were probably not pneumococcal in origin and were associated with acute osteo-myelitis and suppurating wounds, and in these there were multiple pyæmic abscesses. In the pneumococcic cases endocarditis was almost always absent, for only 1 per cent. showed any valvular lesions. In only one of the pneumonic cases was pericarditis the outstanding lesion; three cases showed signs of old pulmonary disease; 54 were associated with empyema and 31 with acute pleurisy or pneumonia; two with acute pulmonary tuberculosis, and eight with septic broncho-pneumonia. In 150 cases of fatal rheumatism in patients under the age of 12 years, which Dr. Poynton analysed ten years ago, 149 showed a valvular lesion. From a study of these cases he holds that rheumatism, though unusual, is by no means rare under the age of five years and that the facts connected with the disease in children strongly support the specific nature of the infection. The 52 cases are detailed. Mr. C. H. Treadgold has contributed a paper on Chloroma and Acute Lymphatic Leukæmia. The account begins with a description of four cases. In the first case a man died six days after the removal of a tooth, followed by persistent oozing of blood, and he had numerous purpuric patches. At the necropsy all the organs examined showed multiple small hæmorhages and there was marked degeneration of the small blood-vessels and their walls were infiltrated by the white cells of the blood. Mr. Treadgold points out the resemblances between chloroma and acute lymphatic leukæmia; he shows that the incidence of the disease is alike as regards age and sex and the symptomatology is very similar; in each there are present weakness, marked anæmia, a tendency to hæmorrhages, and metastases in the liver and kidneys and frequently in the lungs. The differences between the two diseases are chiefly these: in chloroma infiltration of the walls of the small blood-vessels is more marked, metastases are more frequent, the eroding power of the cells is greater, and the cells are on the whole larger and possess more protoplasm alike in the blood, the marrow, and the tissues. The primary growth in chloroma is often in the cranial bones and sometimes in the vertebræ. The initial growth appears not indefinitely in any part of the marrow but in the red marrow only. The question then arises, Does acute lymphatic leukæmia also originate in the marrow? and the answer is given that it does, and the reasons for this answer are: (1) that the marrow is always affected; (2) the cells in the infiltrations closely resemble the cells in the marrow and the blood; (3) the glands and spleen are seldom much enlarged and the more acute the condition the less the enlargement; and (4t the presence of a rapidly progressive anæmia due to deficien) hæmatopoiesis. Mr. Treadgold suggests that acute lymphatic leukæmia has a special tendency to arise in the long bones. He discusses the causation of the green colour in chloroma; he rejects the theories that it is due to some pigment allied to bile pigment and that it is due to putrefaction. He is inclined to think that a degeneration of the abnormal myelocytes which exist in chloroma, aided by the broken-down products of hæmoglobin, is the real source of the colour. Mr. Treadgold sums up his opinions on acute lymphatic leukæmia and chloroma as follows: Acute lymphatic leukæmia is a tumour of malignant nature arising in the marrow of bones; the growth usually consists of amphoblasts, but leucoblastic and mixed types may occur. Chloroma is chiefly a tumour of myeloblasts and arises in the red marrow of bones. Dr. Forsyth continues his article on the Parathyroid Glands and in this number he deals with their pathology.[1] Mr. W. B. Hope and Dr. Herbert French have contributed a valuable paper on Persistent Hereditary Œdema of the Legs with Acute Exacerbations, or Milroy's Disease. They describe in detail the members of a family in which for five generations a certain number of the members (13 out of 42 individuals) have been liable to a persistent œdema of the legs. The cases described in this paper differ from the cases previously described by Milroy and others in that recurrent acute attacks also occurred. The authors consider that the condition is primarily a vaso-motor neurosis. The only treatment of any value is firm and constant bandaging of the legs, and if this bandaging is well carried out the affection does not seem to interfere with the occupation or life. The acute attacks, though dangerous in appearance, pass away spontaneously in a few days and in no case have they caused death. The paper is of the greatest interest, as very few instances of this disease have been recorded. Dr. A. M. Gossage's paper on the Inheritance of Certain Human Abnormalities is based on a number of investigations into hereditary diseases to see how far their occurrence is explicable by Mendel's law. Some of the conditions dealt with are keratosis palmaris et plantaris, epidermolysis bullosa, and hypotrichosis congenita. It seems to us a mistake to include such conditions as Mibelli's disease which some dermatologists look upon as microbic. The diagrams greatly facilitate the understanding of an intricate subject. Dr. A. E. Boycott has written a paper on Caisson Disease. This is due, as Bert showed, to bubbles of air being given off within the body during decompression. Saturation of the

[1] THE LANCET, May 30th, 1908, p. 1566.

tissues takes place slowly: probably about five hours are required; therefore short exposures are much less dangerous than longer ones. Slow decompression is essential to avoid caisson disease but Dr. Boycott tells us that the absolute air pressure may always be reduced to half the absolute pressure at which the tissues are saturated without the risk of causing symptoms, but the slowness of the decompression increases as the pressure falls. Uniform decompression is too slow at first and too rapid later. Young men only should be employed and fat men should certainly be excluded. The only specific treatment of caisson disease is recompression which should be undertaken immediately symptoms appear.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. New series. No. 203 (Vol. LI., Part 3). London: J. and A. Churchill. Price 10*s.* net.—The articles contained in this number are: 1. The Chætognathi or Primitive Mollusca, with a bibliography, by R. T. Günther, F.L.S., Fellow of Magdalen College, Oxford. The chætognathi are commonly named arrow worms and resemble in form the Whitehead torpedo and Mr. Günther's object is to show that the molluscan resemblances are shared by all the chief organs in the chætognath anatomy, as by the nervous, alimentary, genital, and other systems. He does not propose to merge them in any one of the existing molluscan classes but regards them as modern and modified representatives of a free-swimming ancestor from which the molluscan phylum has sprung. Mr. Günther considers the several organs in topographical order. 2. The Structure, Development, and Bionomics of the House Fly, Musca Domestica (Linn.). Part 1. The Anatomy of the Fly, by C. Gordon Hewitt, M.Sc., lecturer in economic zoology, University of Manchester. This article contains a full description of the anatomy of the house fly and is illustrated by many well-drawn plates. 3. Trichomastix Serpentis (new species), by C. Clifford Dobell, B.A., scholar of Trinity College, Cambridge, with a plate. Mr. Dobell states that the subject of the paper is a parasitic flagellate that he obtained from the rectum of a boa constrictor (Linn.). 4. Notes on Common Species of Trochus, by H. J. Fleure and Muriel M. Gettings, University College, Aberystwyth, with a plate. 5. Note on the Formation of the Skeleton in the Madreporaria, by Maria M. Ogilvie Gordon, F.L.S., D.Sc. Lond., Ph.D. Munich. 6. Studies in Spicule Formation. 7. The Scleroblastic Development of the Plate and Anchor Spicules of Synapta and of the Wheel Spicules of the Auricularian Larva, by W. Woodland, the zoological laboratory, King's College, London, with two plates and six text figures. Part 1. The Spicules of Synapta Inhærens and Synapta Digitata.

The Journal of Physiology. Edited by J. N. LANGLEY, F.R.S. Vol. XXXVII., No. 1, May 6th, 1908. London: C. F. Clay. Price 5*s.*—The articles contained in this number of the journal are: 1. Axon Bifurcation in Regenerated Nerves, by W. A. Osborne and Basil Kilvington, from the physiological laboratory, University of Melbourne. The experiments of these observers show that motor axon bifurcation can take place if a plurality of path is offered to a regenerating axon at some distance from its central point of regeneration; if a sensory and motor path be offered to the regenerating motor nerve one branch of the dichotomised axon passes to the muscle originally supplied by the undivided axon and the other branch travels down the sensory path. In the dog afferent nerve fibres cannot degenerate along motor paths. 2. Differential Method of Blood Gas Analysis, by Joseph Barcroft. 3. A note on the Total Fat of Rats, Guinea-pigs, and Mice, by A. E. Boycott and G. C. C. Damant, from the Gordon laboratory, Guy's Hospital. This article gives the relations in tame rats between size and fatness and between sex and fatness, and the weights of fats as estimated by Leathes' modification of Liebermann's method in guinea-pigs, dormice, and tame mice. 4. Crystalline Egg Albumin, by Edith G. Willcock, Fellow of Newnham College, Cambridge. Miss Willcock having occasion to prepare crystalline albumin in order to estimate the phosphorus that it contains found that following Hopkin's method the rotatory effect usually obtained by her was about 31. 5. On the Munchi Arrow Poison and Strophanthin, by George Ralph Mines, B.A., scholar of Sidney Sussex College, Cambridge. The poisonous properties of the Munchi arrow poison seem to be due to strophanthin glycoside. 6. Colchicine with special reference to its mode of action and effect on Bone Marrow, by W. E. Dixon, M.A., M.D., and Walter Madden, M.A., M.D. This number also contains the proceedings of the Physiological Society for Jan. 25th and for March 21st, 1908.

Verhandlungen des Vereins Süddeutscher Laryngologen, 1907 (*Proceedings of the South German Laryngological Society*). Würzburg: A. Stuber. 1907. Price 4 marks.—This volume of the South German Laryngological Society contains 17 papers:—1. A Case of Ichthyosiform Affection of the whole Surface of the Body and of the Upper Air Passages, by Siebermann. 2. A Contribution to the Knowledge of Toxic Laryngeal Paralyses, by Seifert. 3. (*a*) Laryngotomy without Cannula or Chloroform in Scopolamin-morphia Anæsthesia; and (*b*) Laryngoceles in Human Beings, by Avellis. 4. The Value of Transillumination in Disease of the Frontal Sinus, by Vohsen. 5. Microscopical Condition of the Mucous Membrane in Chronic Empyema of the Accessory Sinuses, by Oppikofer. 6. Further Experience in the Radical Operation for Chronic Empyema of the Sphenoidal Sinus, by Denker. 7. Demonstration of Universal Electro-medical Apparatus for Consulting-room and Operation-room, by Katz. 8. Œsophagoscopic Diagnosis of Disease of the Upper Section of the Alimentary Canal, by Starck. 9. (*a*) Further Report on Hypopharyngoscopy; and (*b*) Bronchoscopy, by von Eicksen. 10. Technique of Bronchoscopy, by Brünings. 11. Bronchoscopy, by Nager. 12. Meningitis following Acute Empyema of the Sphenoidal Sinus, Recovery, by Kander. 13. Local Serous Meningitis in Acute Sphenoidal Sinusitis, Spontaneous Recovery, by Avellis. 14. A case of Acute Leukæmia with Death after Adenotomy, by Hug. 15. (*a*) On Laryngological Dangers; and (*b*) On Theories of Asthma. All these excellent papers will amply repay careful perusal.

Le Laryngoscope. April, 1908. Paris: Maloine. Pp. 52. Price 2 francs.—This number contains a very interesting paper on Prolonged Dysphagia as a Relative Sign of Syphilis of the Œsophagus, by Dr. J. Garel; and a valuable paper by Dr. de Lalande on Gastroscopy. The latter is very fully illustrated and includes a coloured plate showing 24 views of conditions found in the stomach. There is also a short report of a case of Fibro-sarcoma of the Soft Palate by Dr. Molini. Besides this there is a short leading article on the treatment of epistaxis.

Geschichte der Laryngologie in Würzburg (*History of Laryngology in Würzburg*). Von Professor Dr. OTTO SEIFERT. Würzburg: Curt Kabitzsch. 1908. Pp. 68. Price 3½ marks.—In this book is set forth with careful accuracy and detail so thoroughly Teutonic the history of the twin specialties of rhinology and laryngology in Würzburg. This historical essay was compiled by Professor Seifert in honour of, and dedicated to, Professor B. Fränkel on his seventieth birthday. The records of the laryngological clinic and clinical instruction in this University go back to 1859, Dr. Gerhardt having been the first teacher.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, MAY 26TH.

THE President's address and part of the work transacted by the Council on this, the first, day of its eighty-seventh session were published in our last issue (p. 1592).

The Recognition of Quebec Degrees.

A report was received from the Executive Committee to the effect that Part II. of the Medical Act (1886) having been extended by an Order in Council to the province of Quebec it has considered the conditions under which certain medical qualifications granted in the province shall be recognised for registration in the Colonial List of the Medical Register of the United Kingdom, and on May 25th, 1908, it adopted the following resolution:—

That any person who holds (1) the degrees of Doctor of Medicine and Master of Surgery of McGill University, Montreal, together with the Licence to practise in the Province of Quebec; or (2) the degree of Doctor of Medicine of Laval University, Quebec, together with the aforesaid Licence to practise, shall be entitled to be registered in the Colonial List of the Medical Register, provided he satisfies the Registrar of the General Medical Council regarding the other particulars set forth in Part II. of the Medical Act, 1886.

The PRESIDENT moved that the report of the Executive Committee on the Quebec degrees should be received, that the Registrar should be directed to give effect to the resolutions therein, and that the Council should express its satisfaction with the step which had been taken, and its desire that similar resolutions might soon be established for the other provinces of Canada. He added that perhaps the expression of the Council's goodwill would accelerate that progress.

Sir JOHN MOORE seconded the motion and it was agreed to.

The Apothecaries' Hall of Ireland.

The PRESIDENT moved that the report of the Executive Committee in regard to the duties of assistant examiners to the Apothecaries' Hall of Ireland should be received. That report stated that the committee submitted for the approval of the Council the following recommendations:—

First, that the examiners appointed by the Council to assist at the qualifying examinations held by the Apothecaries' Hall, Dublin, be instructed to conduct the surgical portion of these examinations, and, in addition, to supervise the medical and obstetrical portions, with the object of securing that at each qualifying examination the required standard of proficiency is maintained. Secondly, that the examiners be instructed to report fully for the information of the Council as to the methods and standards actually adopted at each qualifying examination, and as to the steps they have taken in fulfilment of the duties imposed upon them by Section 5 of the Medical Act, 1886.

The PRESIDENT said that it was made clear to them that the reports were of a confidential character communicated to the Council and not coming under the standing orders relating to inspection and visitation.

Dr. SAUNDBY seconded the motion.

Dr. ADYE-CURRAN said that with reference to the point of law he should be glad to have a definite ruling from the Council's legal assessor as to whether or not it was lawful and in accordance with the statute made and provided for those gentlemen who were appointed to act as assistant examiners by the Council, under Paragraph 2, Section V., of the Medical Act of 1886, to have reported as "inspectors" and for such reports to have been forwarded to the Privy Council. Indeed, it was quite evident from the fact of the words "acting also as your inspectors" having been omitted from the last reports submitted by the assistant examiners that the Council admitted the illegality of the action. This was a matter of very grave importance, affecting not only the reputation of the Council for justice and fair play but also the very existence of the body which he represented. For a number of years past the Council had lost no opportunity of penalising the Hall by every means in its power, and by imposing perpetual inspections and reports had materially injured it both in reputation and, what was of more importance, financially. He would therefore most respectfully ask the Council what reparation it was disposed to make in the future for the injury inflicted by its action in the past. The Executive Committee, apparently not yet satisfied, recommended that even still more elaborate reports should be furnished in the future by the Apothecaries' Hall of Ireland, but it was careful not to recommend that a like duty should be performed by the assistant examiners appointed under precisely similar terms to the Society of Apothecaries of London. Why was the exemption for London and not for Dublin? His board felt very keenly the action taken by the Council, for which there did not seem to have been any just cause. On their behalf he would ask the Council to discontinue, at least for the present, all reports and by resolution to cause those already illegally made to be rescinded, notifying the Privy Council accordingly. Failing that, his board might be obliged to seek a remedy elsewhere. He moved that the reports should be discontinued.

The PRESIDENT said that Dr. Adye-Curran had been under a misunderstanding in one of his remarks. The Council was not acting illegally in this matter.

Mr. HENRY MORRIS moved that the discussion should be postponed until the counsel to the Council was present.

Dr. LINDSAY STEVEN seconded this and it having been agreed to the discussion was adjourned.

WEDNESDAY, MAY 27TH.

The Council resumed its sittings at its offices in Oxford-street, to-day. Dr. DONALD MACALISTER, the President, was in the chair.

The Re-election of the President.

The official notification was made of the appointment of Dr. Donald MacAlister, the President, as Representative on the Council of the University of Glasgow.

The PRESIDENT thereupon said that in accordance with statute he had handed in his resignation as member for the University of Cambridge and by doing so he vacated the chair.

Mr. Tomes, as senior treasurer, took the chair.

Dr. MacAlister was then formally introduced to the Council as the Representative of the University of Glasgow. He was greeted with loud applause.

Dr. LITTLE said: I have much pleasure in moving that Dr. Donald MacAlister be elected President of the General Medical Council. I do not think it has ever occurred that the Council has had an opportunity of electing to this office a man of whose powers as President it was already aware. We have all admired the way in which the business of the Council has been conducted by Dr. MacAlister. His many-sided qualities have been most valuable to us. His uniform courtesy has pleased us all. His power of negotiating with Government departments is well known. His financial ability has asserted itself in retrieving our shattered finances. We have every reason to be pleased with the way in which he has discharged his duties. I am sure I only give an echo to the feelings of members when I propose that Dr. MacAlister be elected President.

Dr. MCVAIL: As one of the electors of the University of Glasgow, which now returns Dr. MacAlister to this Council, I have very great pleasure in seconding the motion. I am sure we in Glasgow may well be proud in having the representative of our University as President of this Council. We know by the good work which he has done at Cambridge and Glasgow that the Council will prosper under his guidance.

The motion was carried by acclamation.

Mr. TOMES said: Dr. MacAlister, I have great pleasure to announce to you that you have been unanimously re-elected to the position of President of the General Medical Council. I congratulate you.

Dr. MACALISTER then resumed the chair. He said: I have most cordially to express my thanks for the too flattering words that have been spoken by Dr. Little and Dr. McVail and for the cordiality with which you have received them. It was a matter of profound gratitude to me when you entrusted me with the presidency of the Council three and a half years ago. I am doubly grateful and doubly proud that you have renewed that confidence to-day. I will endeavour to retain the confidence you have reposed in me. I thank you most heartily for the brotherly, friendly spirit with which I have always been received and supported in this Council.

The Council's Jubilee.

The PRESIDENT then moved that—

The President, treasurers, and chairman of the Business Committee be appointed a committee to make arrangements for the celebration of the Council's jubilee in November, 1908.

He hoped that it would be possible to have some reunion on Nov. 23rd.

The motion was agreed to.

Penal Cases.

The Council then took up the consideration of penal cases.

The first was the consideration (adjourned from Nov. 27th, 1907) of the case of Duncan Shaw Morrison, registered as of Invergowrie, Perthshire, M.B., Mast. Surg. 1891, Univ. Edin., who had been summoned to appear before the Council to answer the following charges:—

That you were on the 24th day of September, 1906, convicted of the following crime or offence at Lochgilphead police court, namely, of breach of the peace, and on the 11th day of February, 1907, at the same court, of the same crime or offence, and on the 18th day of September, 1907, at the same court, of the following crime or offence, namely, of a contravention of Section 70 of the Licensing (Scotland) Act, 1903.

At the conclusion of the November proceedings the President announced that the Council had adjourned the consideration of the three convictions proved against Dr. Morrison until the May session, 1908, when he would be required to be present.

When the case was called Dr. Morrison failed to appear and the Council immediately proceeded to deliberate on it *in camerâ*.

When the public had been readmitted the PRESIDENT said: I have to announce that the Registrar has been directed to erase from the Medical Register the name of Duncan Shaw Morrison.

The next case was another which was adjourned from November. It concerned William Henry Roberts, registered as of 63, Lower Mount-street, Dublin, Lic. R. Coll. Phys. Edin. 1885, Lic. R. Coll. Surg. Edin. 1885, who had been summoned to appear before the Council on the following charge:—

That you have knowingly assisted certain persons who are not registered as dentists—namely, Mr. Keogh, of No. 4, Lower Mount-street, Dublin, and Mr. John Blake Dillon, Messrs. William-Steyn, and Mr. M. William-Steyn, all of 23, Rathmines-road, Dublin, in performing operations in dental surgery by administering and offering to administer anæsthetics, and have so enabled these persons to treat patients and to engage in dental practice as if they were duly qualified in dentistry and dental surgery; and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were the Irish branch of the British Dental Association. At the conclusion of the November proceedings the President said to Mr. Roberts: I have to inform you that the Council has found the facts alleged against you proved to its satisfaction, and that the further consideration of the facts proved has been adjourned till the session that will be held in May next on a day of which you will receive due notice, and when you will be expected to be present.

Mr. ROBERTS, who appeared in person, said that since his case was under consideration in last November he had strictly adhered to the undertaking given on his behalf. It was not his intention to offend in any way again.

After deliberation *in camerâ*, the PRESIDENT announced the decision of the Council as follows: Mr. Roberts, the Council having further considered the facts proved against you does not judge you guilty of infamous conduct in a professional respect. The case is closed.

Mr. ROBERTS: I wish to express my regret at having offended against the regulations of the Council.

The PRESIDENT: The Council will take note of your expression.

The Council passed on to the consideration (adjourned from Nov. 29th, 1907) of the case of Morgan Watkin Williams, registered as of Trewernen, Llantwitfardre, Pontypridd, South Wales, M.B., Bac. Surg. 1900, Univ. Glasg., who had been summoned to appear before the Council on the following charge:—

(1) That you, being a duly qualified and registered medical practitioner, while acting as assistant to Mr. John Bernard Gabe, also a duly qualified and registered medical practitioner, by your countenance, assistance, and coöperation knowingly enabled an unqualified and unregistered person—namely, Mr. Frank Hannah—who was also acting as assistant to the said J. B. Gabe, to attend and treat patients and engage in medical practice as if the said F. Hannah were duly qualified and registered; (2) that you signed a certificate of death—namely, of Alice Mary Jenkins—which stated that you had attended the said Alice Mary Jenkins in her last illness, and that you last saw her alive on May 4th, 1907, whereas in fact you had not so attended her or seen her, but the said Frank Hannah had alone attended and seen her; and that in relation thereto you have been guilty of infamous conduct in a professional respect.

At the conclusion of the proceedings in November the President, addressing Mr. Williams, said: In your case the Council has come to the decision that the facts alleged against you have been proved to its satisfaction, but has adjourned the further consideration of the facts proved until the May session, when you will be required to be present and to furnish evidence of your conduct in the interval, especially in relation to the giving of certificates and association with unqualified assistants.

Mr. WILLIAMS appeared in person. He said that he was sorry for what had occurred. He had had no intention of deriving any pecuniary benefit from it. He had not been associated with any unqualified assistants since and he had not signed any death certificates except in proper order. He need not say that this matter would never occur again.

After deliberation *in camerâ* the PRESIDENT announced the decision of the Council. He said: Mr. Williams, the Council have further considered the facts proved against you and they do not judge you guilty of infamous conduct in a professional respect.

The next case for consideration was that of James Brookes, registered as of 88, St. Paul's-road, Sparkbrook, Birmingham, but who had also a surgery at 105, Ladypool-road, Birmingham, Lic. R. Coll. Phys. Edin. 1871, Lic. Fac. Phys. Surg. Glasg. 1871, who had been summoned to appear before the Council on the following charge:—

That you have knowingly authorised or allowed an unqualified and unregistered person—namely, one J. W. Austin Brookes—to attend and prescribe for patients in your name and on your behalf and to sign in your name documents purporting to be medical certificates of the unfitness of children to attend school, without having yourself attended the children, and thereby have enabled the said J. W. Austin Brookes to act in relation to these cases as if he were a person duly qualified and registered. In particular the said J. W. Austin Brookes has attended and prescribed for the following persons—viz., Minnie Fisher, Elsie Preece, and Lilian Meadows; and the said J. W. Austin Brookes has signed such certificates in the following cases—namely, Minnie Fisher, Elsie Preece, and Lilian Meadows.

The matter was brought to the notice of the Council by the Education Committee of the city of Birmingham.

Mr. Brookes attended in person and was accompanied by Mr. John Pritchard, of Messrs. T. W. Walthall and Pritchard of Birmingham, his solicitors.

The Solicitor to the Council (Mr. WINTERBOTHAM) read various letters and statutory declarations in connexion with the case.

Evidence was submitted on behalf of the complainants. Mr. BROOKES gave evidence on his own behalf and Mr. J. W. A. BROOKES also appeared as a witness.

The Council at the conclusion of the hearing reserved its decision until the following day.

The Council then adjourned.

THURSDAY, MAY 28TH.

The Council resumed its sittings to-day, Dr. DONALD MACALISTER, the President, being in the chair.

Penal Cases.

The consideration of the decision in the case of James Brookes, registered as of 88, St. Paul's-road, Sparkbrook, Birmingham, adjourned from the previous day was then resumed.

After deliberation *in camerâ* the PRESIDENT announced the decision as follows: Mr. Brookes, I have to announce to you that the Council having carefully considered the facts proved against you have decided to direct the Registrar to erase your name from the Medical Register.

The Council then took up the consideration (adjourned from Nov. 27th, 1907) of the case of John P. Rafter, registered as of 338, Stanley-road, Bootle, Liverpool; Lic. Apoth. Hall, Dubl. 1882; Lic. K.Q. Coll. Phys. Irel. 1886; Lic., Lic. Midwif. 1892, R. Coll. Surg. Irel., who had been summoned to appear before the Council on the following charge:—

That you have systematically sought to attract patients in Great Crosby and Waterloo, Lancashire, by the distribution of cards from house to house and in the street; and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were the Medical Defence Union, who were represented by Dr. Bateman.

At the conclusion of the proceedings in November the President, addressing Mr. Rafter, said: I have to announce to you that the Council have found the facts alleged against you in the notice of inquiry have been proved to their satisfaction and that they have adjourned the further consideration of your case to the May session of the Council, when you will be expected to be present and to produce evidence as to your conduct in the interval.

Mr. RAFTER submitted several certificates testifying to his

character. These included letters from the professor of midwifery in the University of Liverpool, the medical officer of health of the Waterloo urban sanitary district, the coroner for South-West Lancashire, the Mayor of Bootle, and other gentlemen.

Dr. BATEMAN made a statement to the Council.

Mr. RAFTER said that he had carried out the instructions of the Council and had handed in evidence with respect to his conduct. He explained that he was in the height of the municipal elections when the incident complained of occurred. He never authorised the distribution of the cards in the way in which they had been distributed. He complained that the charge brought against him had caused him great financial loss. The cards complained of were not intended to be distributed broadcast. He was very sorry and the incident had given him no end of worry.

After the usual deliberation *in camerâ* the PRESIDENT, in announcing the decision, said: Mr. Rafter, I have to announce to you that the Council having further considered the facts proved against you does not judge you guilty of infamous conduct in a professional respect.

Mr. RAFTER expressed his gratitude to the Council for its decision.

Consideration was then given to a charge against Frederick Aubin Monks, registered as of Woodcliffe House, Burgess-hill, Hampstead, N.W, Lic. Soc. Apoth. Lond. 1871; Mem. R. Coll. Surg. Eng. 1871; Lic. R. Coll. Phys. Edin. 1873.

The complainants in this case were the Medical Defence Union. Mr. Monks was represented by Mr. C. F. Gill, K.C., who made a statement on his behalf to the effect that his conduct was not such as to bring it within the charge.

The PRESIDENT, after the Council had come to their finding *in camerâ*, said: Mr. Monks, I have to tell you that the Council have come to the following decision. The facts alleged against you have not been proved to the satisfaction of the Council. That closes the case.

The next case to come under consideration was that of Stanley Southam, registered as of 512, Rochdale-road, Manchester, Lic. Soc. Apoth. Lond. 1900, who had been summoned to appear before the Council on the following charge:—

That you acted as "cover" to an unregistered dentist—namely, Mr. Sydney Smith of 163, Conran-street, Harpurhey, Manchester—by systematically acting for him in your own surgery, in respect of the treatment of patients sent to you by him for dental operations requiring an anæsthetic, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants again in this case were the Medical Defence Union. Mr. Southam was accompanied by his solicitor, Mr. Hamilton, Manchester, who made a statement on his behalf.

Mr. SOUTHAM gave evidence with regard to his own position. He said that his cards, which Smith had got, were not given to him by witness, but in his absence they had been obtained from Mrs. Southam. He had not paid Smith a penny. There was absolutely no arrangement between him and Smith.

The PRESIDENT announced the decision of the Council as follows: Mr. Southam, I have to inform you that the Council having considered your case have come to the conclusion that the facts alleged against you in the notice of inquiry have not been proved to their satisfaction. That closes the case.

The Council proceeded to deal with a complaint against Mr. Arthur Ward which had been reported on by the dental committee. The registrar read the report which contained the following passage:—

The Committee find that the following facts were established by the evidence: Arthur Ward was registered in the Dentists Register on Feb. 26th, 1883, as in practice before July 22nd, 1878, and his address in the Register for the current year is 61, Bull-street, Birmingham. The said Arthur Ward has issued and circulated a pamphlet containing statements of an objectionable character, viz., laudatory statements as to his own skill and methods, and depreciatory statements as to the work of other practitioners, and claims of superiority over other practitioners. After receiving notice of the charge in this case the said Arthur Ward withdrew the said pamphlet and issued another pamphlet which omits certain depreciatory statements as to the work of other practitioners, but contains laudatory statements as to his own skill and methods. The said Arthur Ward expressed his willingness to undertake to withdraw the pamphlet altogether and not to issue any similar advertisements in future.

The British Dental Association, the complainants, were represented by counsel, Mr. Hart. Mr. Ward was accompanied by his solicitor, Mr. W. Coley of Birmingham.

Mr. HART pointed out that the undertaking of Mr. Ward was "not to issue any similar advertisements in future." There was no undertaking that he would not indulge in any further advertising.

Mr. COLEY said that his client was perfectly willing to give an undertaking in the fullest terms desired. He was prepared to give up any pamphlet or advertisement at all with regard to his practice.

The PRESIDENT announced the decision of the Council in the following terms: Mr. Ward, I have to tell you that the Council have carefully considered the report of the Dental Committee and they have adjourned the further consideration of your case until the next session of the Council to be held in November, when you will be required to appear and to give evidence as to your conduct in the interval, and especially in regard to the performance of your undertaking not to issue advertisements of any description in future.

Mr. WARD: I would like to express my extreme regret at having transgressed against the resolution of the Council and I thank you for your consideration.

The next complaint was against William John Watson. The Dental Committee had given it their consideration and their report was read by the Registrar. It contained the following statement:—

The committee find that the following facts were established by the evidence:—William John Watson was registered in the Dentists Register on Dec. 31st, 1878, as in practice before July 22nd, 1878, and his address in the Register for the current year is 8, New-street, Birmingham. In the year 1881 the qualification of Licentiate in Dental Surgery of the Royal College of Surgeons, Edinburgh, was added to his name in the Dentists Register. He was, however, deprived of that diploma by the College in the year 1891 for advertising contrary to the declaration signed by him on admission.

In the year 1901 the said William John Watson caused to be printed, issued, and circulated a pamphlet containing statements of an objectionable character—viz., laudatory statements as to his own skill and methods, and depreciatory statements as to the work of other practitioners and claims of superiority over other practitioners. This pamphlet contains a statement that the said William John Watson had obtained the above-mentioned diploma by examination. Testimonials are also printed in the pamphlet which state that the said William John Watson possesses the said diploma. These testimonials are not dated, but they were in fact given before 1891 (when the said William John Watson was deprived of the said diploma) to assist him in obtaining an appointment he was then proposing to apply for. In the year 1903 or in the year 1906 (the evidence was not clear as to which date) the said William John Watson instructed his printer to destroy the remaining stock of these pamphlets, and the bulk of them were then destroyed, but one parcel was not destroyed, and some of these were recently distributed.

The said William John Watson stated that these copies were accidentally discovered, and that they were distributed inadvertently, and that the remainder have since been destroyed. He undertook in future not to issue the same or any other similar pamphlet, and to discontinue all advertisements.

The complainants were the British Dental Association. Mr. Watson was represented by Mr. A. C. Hayes, his solicitor.

Mr. HAYES made a statement on behalf of his client. He explained that the Edinburgh diploma was taken away because he exhibited a show case with teeth. He hoped that the Council would accept the statement of Mr. Watson with regard to the advertisements.

The Council having deliberated *in camerâ*, the PRESIDENT announced its decision as follows: Mr. Watson, the Council have given careful consideration to the report of the Dental Committee and have come to the conclusion to defer further consideration of your case until the next session of the Council in November, when you will be required to be present and present satisfactory evidence as to your conduct in the interval, with particular reference to your undertaking to discontinue the use of all advertisements.

The Council then adjourned.

FRIDAY, MAY 29TH.

The Council resumed its sittings at its offices at 299, Oxford-street, W. Dr. DONALD MACALISTER, the President, was in the chair.

The Catford Case.

The Council resumed the consideration of a case adjourned from Nov. 29th, 1907, concerning John Papa Nicolas, registered as of 87, Dowanhill-road, Catford, S.E., M.R.C.S. Eng., L.R.C.P. Lond. 1904, who had been summoned to appear before the Council on the following charge:—

That you have systematically canvassed in Catford for patients by personal visits to patients of Mr. Thomas William Atkinson and to others, both while you were in the employment of the said Thomas William Atkinson and subsequently, and that in the course of such canvass you disparaged the qualifications and skill of the said Thomas William Atkinson and extolled your own; and that in relation thereto you have been guilty of infamous conduct in a professional respect.

After the case had been under consideration for a day in November the Council postponed further hearing of it in accordance with an intervention of the King's Bench Division.

The complainants were the London and Counties Medical Protection Society. They were represented by counsel, Mr. Neilson, who was accompanied by Dr. Hugh Woods, the secretary to the society.

Mr. John Papa Nicolas attended and was accompanied by Mr. H. J. Randolph Hemming, his solicitor.

At the November proceedings the opening statement of the complainants was made and Mr. Thomas William Atkinson was examined and cross-examined.

Mr. HEMMING at the outset raised an objection to the competency of the Council to hold the inquiry. For 50 years its jurisdiction had been exercised. However, he contended that the jurisdiction was *ultra vires*. The object of the Medical Act was stated in the preamble to be to enable persons to distinguish between qualified and unqualified practitioners. The Council only registered the qualification. It was clear that the Act was not passed in order to give any new form of jurisdiction. The Council had to keep the Medical Register, to deal with the registration of dentists, and with the education of practitioners and the compilation of the Pharmacopœia. The language of the statute should not be construed so as to erect a new tribunal with powers far in excess of those exercised by magistrates. He therefore respectfully urged that the Council had no jurisdiction conferred upon it under Section 29 of the Medical Act, 1858, to try Mr. Nicolas for infamous conduct or to deprive him of his qualifications and status as a medical practitioner.

Mr. LUSHINGTON (the legal assessor): This Council entertains no doubt whatever in the matter in this case. We have received the objection and put it on the file.

Mr. HEMMING proceeded to raise another objection. He had to contend that the proceedings were irregular and void in consequence of a rule of the Council not having been carried out, and in consequence of the accused practitioner not having been heard in the preliminary inquiry as he ought to be heard.

Mr. LUSHINGTON: We cannot receive that objection any further.

Mr. HEMMING went on to submit that his client was entitled to put his objection before his judges, and although it might not satisfy the legal assessor, yet it might enable the members of the Council to perform their duty.

Mr. LUSHINGTON: You may hand in the paper. No court or tribunal or body with judicial functions ever entertains the question judicially whether it is acting so as to prejudice itself or not. It cannot be a judge of that question. We will receive the objection. We will not have it argued and we will not have it read.

Mr. HEMMING: I am not asking the court whether it has been guilty of prejudice and bias. Owing to what has occurred my client has not had an opportunity of putting his case before the Council which he ought to have had by the Council's own rules. I take it something has been done in defiance of the Council's own rules and it has seriously prejudiced the defence of the accused practitioner who ought to have been heard.

Mr. LUSHINGTON: There I differ from you. That ought not to be heard.

He went on to point out that there was an overruling power for the Council constituted by the law of the land. He asked Mr. Hemming to hand in his objection and proceed to the next point.

Mr. HEMMING (continuing) said that it was his duty to object to the President presiding over the inquiry on the ground that he had presided over the Penal Cases Committee and there he might be assumed to have come to a conclusion with regard to the accused practitioner. This objection became the more evident on the score that Mr. Nicolas should have had an opportunity of placing his case before the Penal Cases Committee. It would follow, he thought, that the President had come to the conclusion that the evidence which had been placed before him was trustworthy and credible enough to bring the accused practitioner before the Council. This, he argued, disqualified the President from acting as a judge in the case against the practitioner. His client believed that he had a substantial complaint against the earlier conduct of these proceedings with regard to many points and he did not wish to have to appeal to Cæsar on it. Mr. Nicolas had not had the opportunity of repelling the attacks on his character which were promulgated behind his back, and on this ground the objection must be pressed with great anxiety and earnestness. It had been suggested to him that it was indiscreet to urge such reasons, and that it might prejudice his client's case. He refused to believe that any objection raised on proper grounds before English gentlemen would prejudice his client. He protested against the President presiding at the inquiry.

Mr. LUSHINGTON: There is nothing whatever in that objection and I shall advise the Council to that effect. I shall advise the President to continue sitting.

Mr. HEMMING: On the same ground I have got an objection to any member of the Penal Cases Committee sitting on the case.

Mr. LUSHINGTON also overruled this objection.

Mr. HEMMING further pointed out that by the rules of the Council no complaint should be considered by the Penal Cases Committee until a statutory declaration as to the facts of the case had been supplied by the complainant. He did not think the legal assessor would say that the complainant had furnished any such declaration. The complainant was the London and Counties Medical Protection Society. There was no statutory declaration and there could not be a statutory declaration by the London and Counties Medical Protection Society. There was a statutory declaration by Mr. Atkinson, and he ought to be the complainant. It did not answer the Council's rule that the complaint should be put forward by somebody else. Mr. Atkinson had made a declaration as to hearsay. Therefore, he contended, the proceedings could not be commenced before the Council until they had some responsible complainant.

Mr. LUSHINGTON: I understand that your point is that there is no statutory declaration as to the matter submitted by the complainant.

Mr. HEMMING: Yes.

Mr. LUSHINGTON: I overrule that at once because there are 30. He pointed out that the Council would try the case not only on the statutory declarations but on evidence to be submitted. He further asked Mr. Hemming whether, if his client had an absolute answer, it was worth while to claim any technical points.

Mr. HEMMING said that he understood he was not to be allowed to cross-examine Mr. Atkinson on certain points because legal proceedings were being taken in the King's Bench Division.

Mr. LUSHINGTON replied that Mr. Hemming's client having started an action for libel founded on two particular letters it became his duty to put an innuendo on these letters and to prove it. His ruling had been that Mr. Atkinson should not be cross-examined so as to furnish it. Mr. Atkinson had been examined, cross-examined, and re-examined in November. The present was not the time for raising the point but he would see that no improper question was put to Mr. Hemming's witnesses.

Mr. HEMMING asked that he might be allowed to continue his cross-examination of Mr. Atkinson.

Mr. LUSHINGTON: That application is refused.

Mr. HEMMING proceeded to submit further objections. He claimed that the charge ought to be sufficiently clear to enable him to deal with it. He believed that the Council never informed an accused practitioner on what point a decision turned. The legal assessor had said that there was a court which could revise the proceedings of the Council. Surely there ought to be material to take before that court in order that the proceedings might be revised. In the charge the accused practitioner was charged with canvassing "by personal visits to patients of Mr. Thomas William Atkinson and to others." He would emphasise the words "and to others." If these words went before the King's Bench his client's representatives could not satisfy that tribunal that they did not form a part of the judgment. He therefore asked that these words should be amended as an indictment would be, before a judge in any court. He desired that the words "and to others" should be struck out.

Mr. LUSHINGTON replied that after what Dr. Woods, who had conducted the case in November, had said, Mr. Hemming might take it that no evidence would be tendered on that point; and further, that Mr. Nicolas was entitled to an acquittal so far as the charge that he had systematically canvassed in Catford for patients by personal visits to persons other than patients of Mr. Atkinson, was concerned. Mr. Hemming need not trouble himself further about that.

Mrs. MURPHY, now of Southampton but formerly resident in the Catford district, the wife of a builder, was then examined as a witness. She stated that she had been a

patient of Mr. Atkinson and had met Mr. Nicolas, his assistant. She alleged that in 1907 Mr. Nicolas had called on her and told her that he had a medical practice and would be pleased to attend her.

Cross-examined by Mr. Hemming, she denied that Mr. Nicholas came to discuss the price of a red lamp.

Mrs. REDNALL, a patient of Mr. Atkinson, alleged that Mr. Nicolas had stated to her that he was going to set up on his own. She further stated that Mr. Nicolas said: "We young doctors know all the new ideas coming from the hospital. The old doctors know nothing."

Miss E. ROSS, a professional nurse residing in Catford, was another witness. She had nursed Mr. Atkinson's cases and asserted that Mr. Nicolas had criticised and changed treatment prescribed by Mr. Atkinson.

Cross-examined, she admitted that perhaps half her cases were also those of Mr. Atkinson.

The Council postponed the further hearing of the case until the following day and then adjourned.

SATURDAY, MAY 30TH.

The Council resumed its sittings to-day. Dr. DONALD MACALISTER, the President, was again in the chair.

The Catford Case.

The hearing of evidence in connexion with the charge brought against Mr. John Papa Nicolas was resumed. Witnesses were heard in support of the charge.

Mrs. EDNY, Catford, alleged that Mr. Nicolas told her that his fees were less than those of Mr. Atkinson.

Mrs. SUSAN HART declared that Mr. Nicolas had told her Mr. Atkinson "was no good for children" and that he was one of the old school.

Dr. HEMMANS, Lewisham Park, was another witness. He knew Mr. Nicolas. On one occasion Mr. Nicolas had said to him that Mr. Atkinson was not likely to have a partnership for many years.

Cross-examined by Mr. HEMMING witness admitted that at one time he was friendly with Mr. Nicolas. He had a high opinion of Mr. Nicolas's professional skill.

Mr. G. LAWRENCE, who stated that he was a Member of the Royal College of Surgeons, was another witness. He said that he had been a partner of Mr. Atkinson since July, 1907. He had accompanied the Commissioner for Oaths when the statutory declarations in connexion with the charge were signed. The declaration in each case had been read over to the person signing it. It was deliberately read and in his opinion the people who signed understood what they were signing.

Cross-examined by Mr. HEMMING he admitted that a libel action was pending against him which was intimately connected with the matter before the Council. He admitted that the declarations were signed in the evening. Although 12 of them bore the same date he denied that undue haste had taken place or that the contents had been hurried over to the declarants before they signed them. He had asked patients of his and of Mr. Atkinson for evidence in regard to the case under consideration.

Mr. POUTER, Commissioner for Oaths, who was present at the signing of the statutory declarations, stated that the signatures had been obtained in the proper and regular way.

Several witnesses made statements in support of the charge, and they were minutely cross-examined by Mr. HEMMING as to the dates of the incidents which they alleged and as to points affecting the consistency and credibility of their evidence.

Mrs. WICKS, one witness who had lost a baby, stated that Mr. Nicolas had told her that if she had brought it to him he could have saved it. She also alleged that he said that Mr. Atkinson had lost babies but he had not lost one.

Cross-examined by Mr. HEMMING she admitted that no third person was present when the alleged statement was made to her.

Mr. NEILSON said that he had called 13 witnesses in support of the charge, and he had 24 in addition to those whom he could call, but he declined to do so in the interests of all concerned. He therefore proposed to close his case subject to this. In November Dr. Woods, who was then in charge of the case, pledged himself to go into the witness-box. He could not say that Dr. Woods could give any relevant evidence on the matters at issue. Having given that pledge he felt sure comment would be made if Dr. Woods did not go into the witness-box.

Dr. HUGH WOODS entered the witness-box but was asked no questions by Mr. Neilson.

In answer to Mr. HEMMING he admitted that he had been to Catford in connexion with the case. He had gone down to assure himself of the accuracy of some statutory declarations on which doubt had been cast, but he strongly denied that he had tried to influence witnesses. He had done nothing improper.

This closed the case in support of the charge.

Mr. HEMMING then opened the case for the defence. He submitted that no case had been made out as to there having been "systematic canvassing."

Mr. LUSHINGTON ruled that there was a *primâ facie* case to go to the Council on the word "systematically."

Mr. HEMMING: I object to the charge because it is not in accordance with the rules of the Council.

Mr. LUSHINGTON: That also is overruled.

Mr. HEMMING: Even if the charge were proved I submit that it would not amount to infamous conduct in a professional respect. The General Medical Council had defined the offences which came under the heading of canvassing and advertisement. What was not included in that definition must be excluded from it. The evidence, so far as it was trustworthy, could not amount to evidence of infamous conduct in a professional respect under the Medical Act. In view of the character of the witnesses and the hostility which they had shown there was no case whatever for him to answer with regard to infamous conduct in a professional respect. Here was a young practitioner who claimed to be entitled to practise where he was practising. He was opposed by an elderly gentleman. The Council had seen the character of the witnesses and seen how easy it was for an innocent expression to be twisted into something dangerous. He submitted again that this was not an instance where there was any case to go forward with.

Mr. LUSHINGTON said that he would advise the Council differently. The document which Mr. Hemming had just been alluding to was not law. It was a warning. It was for the Council to say upon the facts of each case as laid before them whether the conduct disclosed was or was not infamous conduct in a professional respect, quite apart from the question whether it came within the warning notice or not. The matter had been very well put in the Court of Appeal by the late Lord Esher. He had said: "If it is shown that a medical man in the pursuit of his profession has done something in regard to it which will be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute then it is open to the General Medical Council to say that he has been guilty of infamous conduct in a professional respect."

Mr. HEMMING then called evidence in defence of Mr. Nicolas.

Mr. BELLMAN, a druggist, stated that Mr. Lawrence had called on him and told him that Mr. Nicolas was trying to get his patients away.

Mr. HEMMING went into the witness-box and was granted leave to be examined by his clerk who was a qualified solicitor. He stated that in January, 1906, Mr. Nicolas had attended his wife. At that time he had asked Mr. Atkinson as to Mr. Nicolas's ability. Mr. Atkinson then could not say anything too extravagant in favour of Mr. Nicolas. He asked Mr. Nicolas what he thought of Mr. Atkinson and he spoke very handsomely of him. It had been stated that Mr. Atkinson's lowest confinement charge was a guinea. He had had an opportunity given him to examine Mr. Atkinson's books. The lowest midwifery charges in them were 10*s.*, 12*s.*, and 15*s.*

Briefly cross-examined by Mr. NEILSON he said that it was alleged that Mr. Nicolas systematically canvassed Mr. Atkinson's patients. When he gave Mr. Nicolas an opportunity of disparaging Mr. Atkinson he praised him.

Mr. NEILSON: The amount of your evidence, I suppose, is that he did not canvass you.

Mr. HEMMING: He did not canvass me.

Mr. JOHN PAPA NICOLAS, against whom the charge was made, went into the witness-box. He stated his qualifications.

At this point his examination was postponed.

The Council adjourned.

MONDAY, JUNE 1ST.

The Council resumed its sittings to-day, Dr. DONALD MACALISTER, the President, being in the chair.

The Catford Case.

The Council proceeded with the further hearing of evidence

in connexion with the charge against Mr. John Papa Nicolas, a report of which will be given in a later issue.

TUESDAY, JUNE 2ND.

The Council resumed its sittings to-day, Dr DONALD MACALISTER being in the chair.

The Business of the Council.

Dr. NORMAN MOORE at the outset of the proceedings said that Dr. Langley Browne, in view of the time that would necessarily be occupied with other business, had consented to withdraw his motion to the effect that "representations be made to the Privy Council that it is expedient to confer on the registered practitioners resident in England and Wales the power of returning an additional member to the General Medical Council." In view of the fact that some time would be required to discuss the matter adequately the motion would be postponed until the next session of the Council. There was a matter of urgency to which he had to allude. It referred to some questions with regard to the property of the Council. He suggested that the Office Site Committee, consisting of the President, the treasurers, and the chairman of the Business Committee, should be authorised to decide, when consulted by the solicitor, as to certain matters of urgency in regard to the letting of part of the Council's property.

A motion giving effect to this suggestion was adopted by the Council without discussion.

The Examination Committee's Reports.

On the motion of Dr. MCVAIL two reports by the Examination committee were formally received and entered on the minutes. The first refers to the final examinations held by the Apothecaries' Hall, Dublin, in January and April, 1908. It runs:—

The assistant examiners report, as regards the examination of Jan. 29th, 1908, that they "were satisfied with the manner in which this examination was conducted, and the standard of proficiency in medicine, surgery, and midwifery required from the candidates was sufficient and searching in every detail." Concerning the examination held on April 29th, 30th, and May 1st, 2nd, 1908, the assistant examiners "were satisfied with the manner in which the examination was conducted, and they considered that the standard of proficiency in medicine, surgery, midwifery, and ophthalmology was sufficient and searching in every detail." The assistant examiners supply copies of the written questions and give the results of the examination in each subject, with passes and rejections, but otherwise give no detailed information.

The second report referred to the analysis of the returns as to examinations for the services received since the last session of the Council.

No discussion took place on either.

Report of the Pharmacopœia Committee.

Dr. NORMAN MOORE moved that the report of the Pharmacopœia Committee should be received and entered on the minutes. The report was in the following terms:—

From Nov. 18th, 1907, to May 18th, 1908, the number of copies of the British Pharmacopœia (1898) sold by the publishers was 588. The total number of copies sold in the year beginning May 25th, 1907, was 1095. Up to the present time 39,769 copies of the Pharmacopœia and 4470 copies of the Indian and Colonial Addendum have been sold. A further impression of the Pharmacopœia having been ordered the stock on hand now consists of 3261 copies, together with 1894 copies of the Addendum. The Committee of Reference in Pharmacy have presented two reports, one containing suggestions for the revision of certain monographs of the Pharmacopœia (1898), the other containing the results of an analysis of 48,000 prescriptions actually dispensed by pharmacists in England, Scotland, and Ireland during the last year or so. Information has also been furnished by wholesale druggists and manufacturers regarding the unofficial drugs and preparations for which there is a large demand and regarding the official articles for which the demand has become very small. The details thus supplied by the Committee of Reference at the cost of much labour will be of material assistance to the committee in deciding on the inclusion in or omission from the next Pharmacopœia of particular articles.

In order that they might ascertain the views of the medical authorities regarding such inclusions or omissions, inquiries have been addressed by the President to the several licensing bodies in the United Kingdom. In response to these inquiries the Committee have received a large number of careful reports, prepared by special committees appointed by the bodies and sanctioned by their authority. The suggestions for the improvement of the Pharmacopœia therein contained will now be analysed and tabulated and will be considered by the committee in due course. The thanks of the committee and of the Council are due to all those who in this connexion have willingly assisted towards the production of a Pharmacopœia which will reflect faithfully the present state of medical and pharmaceutical science and practice.

The attention of the committee having been called to a recent publication which appeared to them to infringe the Council's statutory rights in the Pharmacopœia the opinion of counsel was taken on the subject. The opinion confirmed the view taken by the committee and suggested the proper steps to be taken for the Council's protection. Acting on the legal advice thus obtained representations were made to the publishers, with the result that the present issue of the publication has been stopped. Guarantees have also been furnished that future issues shall not be open to the like objection. In view of the legal sanction which the Pharmacopœia possesses, not only in the United Kingdom but in other parts of the empire, it is important that its official authority should be safeguarded, and that the statutory property in its text, which the Legislature has vested in the Council, should not be impaired by the publication and sale of unauthorised transcripts.

Sir JOHN MOORE seconded.

The motion was agreed to without discussion.

The Assistant Examiners to the Apothecaries' Hall of Ireland.

The Council resumed consideration of the report by the Executive Committee in regard to the duties of assistant examiners to the Apothecaries' Hall of Ireland. The Executive Committee submitted the following recommendations to the Council:—

1. That the examiners appointed by the Council to assist at the qualifying examinations held by the Apothecaries' Hall, Dublin, be instructed to conduct the surgical portion of these examinations; and, in addition, to supervise the medical and obstetrical portions, with the object of securing that at each qualifying examination the required standard of proficiency is maintained.
2. That the examiners be instructed to report fully, for the information of the Council, as to the methods and standards actually adopted at each qualifying examination, and as to the steps they have taken in fulfilment of the duties imposed upon them by Section 5 of the Medical Act, 1886.

The PRESIDENT moved that the recommendations of the Executive Committee should be adopted.

Dr. NORMAN MOORE seconded.

Dr. ADYE-CURRAN asked that the two recommendations should be put separately. One of them he considered legal but the other was not.

Sir THOMAS MYLES moved to amend the first recommendation so that it should read as follows:—

That the examiners appointed by the Council to assist at the qualifying examinations held by the Society of Apothecaries of London and by the Apothecaries' Hall, Dublin, &c.

He would not take up the time of the Council by speaking on his amendment.

Dr. SAUNDBY seconded the amendment.

Sir HUGH BEEVOR commented on the fact that no reasons had been given for the amendment and he knew no reason why there should be a change in the custom of the Council. The custom of the Council for many years had not been that there should be a report on the Apothecaries' Society of London. He did not see why there should be a departure from that custom. There was a very valid reason for a long time why the Apothecaries' Hall of Ireland should be examined. That was a matter of history long before his time, and the President was cognisant why this course had been followed in Dublin and not in the case of the Apothecaries' Society of London. He repeated that no change ought to be made.

Sir C. NIXON suggested that the discussion on this subject should be postponed until they had finished the penal business. He would like to say a few words in connexion with it.

Dr. ADYE-CURRAN said that he did not think that one side of the matter should be discussed and then the consideration postponed indefinitely. That might lead to fixing one side of the case only in the minds of members of the Council.

The discussion of the matter was then postponed.

The Dental Education and Examination Committee.

Mr. TOMES moved that the report of the Dental Education and Examination Committee should be received and adopted. The report dealt mainly with the refusal of registration as a foreign dentist to a Russian subject. It also stated that an inquiry as to reciprocity had been received from the Dental Council of Canada, which forwarded particulars of the requirements for its diploma. It appeared, however, that this was so far a voluntary combination and it did not appear that it had obtained any legislative recognition. Until this was obtained it would be impossible for the General Medical Council to take cognisance of its diplomas.

Mr. MORRIS seconded.

The motion was agreed to.

Unqualified Practice Prevention Committee.

Dr. LANGLEY BROWNE moved that the report of the Unqualified Practice Prevention Committee should be received and adopted. The report went on to state that through the good offices of the Lord President of the Council information desired with regard to unqualified practice abroad had been furnished. The report proceeded:—

Most countries make some attempt to regulate the existence of medical practice, to check unlicensed practitioners, and to confine the

exercise of the healing art to members of their own nationality, or, at any rate, to those who have passed some medical examination in the country. These regulations vary very considerably, and seem to depend upon two main considerations: I. The more enlightened countries consider the question from the point of view of protecting the public from the dangers of unqualified practice by regulating the sale of poisons, dangerous drugs, &c., and put in the background the necessity of the practitioner being qualified according to their own colleges or universities. II. Other countries seem to regard it more as a means of exacting a fee for the privilege of practising, and to attach more importance to registration or licensing than to the qualification of the practitioner.

Germany alone leaves the practice of the healing art prefectly free so long as the practitioner does not assume certain titles and does not seek recognition by the municipal or police authorities. Should he desire to be recognised as a medical man or even as a veterinary surgeon he must obtain an "approbation," which is equivalent to a licence to practise and to assume such title to designate his specialty as he pleases. Italy is distinguished by the grant of a general permit to the properly qualified foreign practitioner to attend to his own countrymen, but this is a concession to the foreign population rather than to the medical profession, and practice among Italians is permitted only on obtaining an Italian diploma. With regard to the colonies, returns have been received from the Dominion of Canada and her ten provinces and from the three districts of South Africa. In Canada the disposition has been to acknowledge all good foreign degrees and especially to recognise the English register, but it is evident that with the growth of Canadian schools of medicine there is an increasing tendency to require a local examination, and as increased facilities for medical study extend westward this tendency is likely to increase.

At the present time the ambition of the Canadian practitioner is to come to England and obtain an English diploma in addition to his Colonial degree, but that is because so far the Universities of Canada do not seem to have been fully recognised; for instance, they are not named among the other colonial schools whose diplomas are recognised in the schedule to the Act in South Africa. With regard to the general question of penalty the recognised offences are as follow: Unqualified practice; unregistered or unlicensed practice; the illegal assumption of titles; the administration of poisons or other potent drugs; and want of proper skill in either qualified or unqualified practitioners. The conditions which prevail in Egypt are somewhat exceptional and special permission is given to the barbers to continue their practices, which are historical, and which include the rite of circumcision, bleeding, cupping, leeching, and vaccination.

The Egyptian Government appear to recognise any genuine diploma, and there seems reason to believe that great notice is taken of the administration of drugs and poisons; there is also a strong medico-legal department in Egypt which deals with unqualified administration of drugs, &c. It is not possible to attach much importance to the law in South America, as it would appear that, with the exception of Brazil, the question is regarded by the smaller States as rather fiscal than for public protection, and in such unsettled countries as Uruguay and Panama the methods adopted can hardly be seriously considered. The recognition of charity and religion as a cloak for unqualified practice prevails in Russia, and although no returns are here given it also exists among the protectorates of the northern littoral of Africa west of Egypt. Several countries appear from the details given to be in favour of reciprocity in admitting degrees of equivalent value, but no general consensus can be discovered. It may also be remarked that the most exacting country is Switzerland, which requires a complete examination from all who seek to practise even among foreign visitors.

The returns received from the Foreign Office and from the Colonial Office comprise the reports of 34 countries and six of our own colonies. Other returns have been received during the present week. Of these, Persia, Morocco, Zanzibar, and Abyssinia possess no regulations for medical practice; nor does the Empire of India. The conditions prevailing in the German Empire are exceptional. It would appear that so long as the would-be practitioner does not assume any title—e.g., physician, surgeon, oculist, dentist, obstetrician, &c.,—he may practise as much as he pleases. Some of the component States of the German Empire have made local regulations, but while returns are shown from Baden, Bavaria, Hesse, and Würtemburg, the conditions prevailing generally are set out in the despatch from the Foreign Office at Berlin.

The committee propose to continue their investigations and to report further at the next session of the Council.

Sir JOHN MOORE seconded.

The motion was agreed to without discussion.

The Students' Registration Committee's Report.

On the motion of Sir HUGH BEEVOR the report of the Students' Registration Committee was received and adopted.

Removals from the Register.

On the motion of Dr. LATIMER, seconded by Dr. SAUNDBY, a motion was agreed to that the Executive Committee should be requested to consider the report on the course to be followed in the case of practitioners who applied to be removed from the Medical or Dentists Register.

The Report of the Finance Committee.

Mr. TOMES moved the adoption of the report of the Finance Committee. This report showed that the income of the General and Branch Councils for the year ending Dec. 31st, 1907, was £8465 17*s.* 11*d.*, and the expenditure during the year was £7370 17*s.* 9*d.*, and consequently there was a surplus of £1095 0*s.* 2*d.* The report went on to say that this was very satisfactory indeed, bearing in mind that £235 6*s.* 11*d.* and £415 17*s.* 2*d.* respectively were written off the cost of office improvements and the enlargement of the Council chamber, and so appeared under the heading of expenditure. The receipts from fees were almost identical with those in 1906, for the small difference of £30 1*s.* 6*d.* less received by the branches was compensated by £30 more received by the General Council for colonial and foreign fees. The English Branch showed a large decrease of £265 under this head, but that was nearly wiped out by £195 13*s.* 6*d.* more received by the Scottish Branch, and £39 5*s.* more received by the Irish Branch.

Dr. LITTLE seconded the adoption of the report, which was agreed to without debate.

Appointment of Committees.

The following committees, among others, were appointed:—

The Examination Committee, consisting of Dr. Pye-Smith, Mr. Young, and Dr. Caton (nominated by the English Branch Council), Sir Thomas Fraser, Dr. Finlay, and Dr. McVail (nominated by the Scottish Branch Council), Dr. Kidd, Sir John Moore, and Sir Charles Ball (nominated by the Irish Branch Council).

The Education Committee, consisting of Dr. Norman Moore, Sir George Philipson, and Sir John Williams (nominated by the English Branch Council), Dr. Mackay, Sir John Tuke, and Dr. Lindsay Steven (nominated by the Scottish Branch Council), Sir Thomas Myles, Sir C. Nixon, and Dr. Little (nominated by the Irish Branch Council).

The Public Health Committee, consisting of Dr. Cocking, Mr. Power, and Dr. Langley Browne (nominated by the English Branch Council), Dr. Norman Walker, Dr. Lindsay Steven, and Dr. McVail (nominated by the Scottish Branch Council), Sir John Moore, Dr. Kidd, and Dr. Adye-Curran (nominated by the Irish Branch Council).

The Pharmacopœia Committee, consisting of the President, Dr. Norman Moore, Dr. Barrs, Sir John Moore, Sir G. Philipson, Sir Thomas Fraser, Dr. Little, Dr. Caton, and Dr. McVail.

It was also announced that the Executive Committee and the Penal Cases Committee had been re-elected without any change of *personnel*.

WEDNESDAY, JUNE 3RD.

The Council concluded its sittings this evening, and late in the day the decision in the Catford case was given against Mr. John Papa Nicolas, whose name was ordered to be erased from the Register for unprofessional conduct. An application was made by Mr. Hemming, Mr. Nicolas's solicitor, that the erasure should be postponed for a month in order that a writ of *certiorari* might be applied for.

LYNN THOMAS AND SKYRME FUND.

THE following subscriptions have been received between May 22nd and May 29th by Mr. William Sheen, M.S. Lond., F.R.C.S. Eng. (2, St. Andrew's-crescent, Cardiff), honorary secretary to the fund.

Subscriber of Two Guineas.

Russell Coombe, Exeter.

Subscribers of Two Pounds One Shilling.

Bolton Medical Society, per Douglas Gray, the amount being made up as follows:—

One Guinea from—

H. Jefferies, Bolton.

Five Shillings from—

F. Dowling, Bolton.
Douglas Gray, Bolton.
T. O'Neill, Bolton.
D. S. Sutherland, Bolton.

Subscribers of One Guinea.

H. W. Armit, Wembley.
H. E. Belcher, Nottingham.
Edward E. Brierley, Cardiff.
R. Cameron, Cardiff.
P. T. Duncan, Croydon.
A. B. Fry, Capt., I.M.S., India.
Walter Kirkby, Maesteg, Glam.
J. W. Pugh, Brighton.
Charles Sangster, London.
H. T. Shaw, Liverpool.
J. H. Teacher, Glasgow.
J. F. Twist, Bridgend.
Ernest E. Warr, London.

Subscriber of One Pound.

Richard Jones, Blaenau Festiniog, N. Wales.

Subscribers of Half-a-Guinea.

James Anderson, Seaton Delaval, R.S.O.
John R. Rolston, Plymouth.
William Wyllys, Great Yarmouth.
W. Courtenay Milward, Cardiff.
Levenshulme and District Medical Society, per E. Maynard Ashcroft, Manchester.

Subscriber of Ten Shillings.

R. W. Innes Smith, Sheffield.

Subscribers of Five Shillings.

A. F. R. Conder, Cheltenham.
John Mason, Windermere.

Subscriber of Half-a-crown.

Thomas Du B. Whaite, Lieutenant-Colonel R.A.M.C., per L. D. Parsons, honorary secretary, Gibraltar Division, British Medical Association.

THE LANCET.

LONDON: SATURDAY, JUNE 6, 1908.

The French Hospital and the "Entente."

FEW conditions could more aggravate the pains and perils of sickness than that they should be suffered among strangers in a foreign land; and few charities can have greater claims upon the benevolent than those which seek to surround such sufferers, as completely as may be possible, with the accents of the tongue which takes them back to the days of their childhood and with the innumerable *petits soins* which may recall memories of home. The hospitals which have been established in London for the treatment of the members of foreign nationalities have always seemed to us to be eminently worthy of the support, not only of the members of those nationalities who may be settled amongst us, but also of our own people; and the PRESIDENT of the French Republic could have done nothing more worthy of his high station, or of the great nation which he represents, than to withdraw himself for a time from the honours and festivities with which he has been received and to devote the leisure thus obtained to a visit to the French Hospital in Shaftesbury-avenue and to the practical display of his sympathies with the humblest of the population under his rule. It is pleasant to read in the reports of his visit that during its course "laughter sometimes rippled through the wards," and there can be little doubt that Sister-Superior CÉLINE was justified in the expectation which she expressed—that his coming would be "better than medicine" for many of those under her care. The patients, moreover, would be rejoiced at the official recognition of her long and faithful services by the Cross of Merit with which the PRESIDENT personally decorated her, as well as by the decorations conferred on some of the officials of the institution, and there can be no doubt that the day and the event will be long remembered as things of mark in the history of the institution. President LOUBET, when he was in London five years ago, paid a similar visit; but the steady subsequent growth of friendship between the two nations has added greatly to the importance of the Presidential action in English eyes; and we cannot but hope that it will also add to the substantial recognition of the French Hospital as a charity eminently worthy of our good wishes and of our efforts to give effect to them. The histories of medicine and of surgery owe much to France, and we can make no more graceful recognition of our debt to her than by provision that those of her children who are sick and suffering in our midst shall be surrounded with such care as may best promote their recovery.

The French Hospital, like many other excellent institutions, has grown to its present estate from small beginnings. It was in the first instance established as a dispensary by the late Dr. VINTRAS, a highly respected member of the French colony in London; and in 1867, after six years of eminently useful work, its doors were opened as a hospital with a modest equipment of 16 beds, increased in the following year to double that number by the absorption of an adjoining house. The demands upon its space continuing to increase, the French colony in London set themselves energetically to work to establish an institution worthy of their nationality, with the result that the present hospital was built and was opened in 1890 by the Ambassador, M. WADDINGTON. Since then two adjacent houses have been secured, one as a home for the nurses and the other as an infirmary for cases of pulmonary tuberculosis, so as to keep them from mixing with other classes of patients; and the total number of beds now amounts to 82. The management justly prides itself upon the economy of management in respect of which the French may fairly claim to offer an example to all other nations, and it is announced that the absolute cost of food for the patients amounts only to about one shilling (1fr. 25c.) per head per day. Nor is the economy obtained by any sacrifice of things still more essential, for the management quotes from the report made to King Edward VII.'s Fund by the visitors, Sir TREVOR LAWRENCE and the late Mr. MACNAMARA, a passage in which they "desire to express their admiration of the organisation, and of the order which reigns throughout." They further declared the hospital to be a model of what an institution of the kind ought to be and to leave nothing to be desired. It still failed, nevertheless, in meeting two urgent demands, a place of recovery for convalescents and a home for aged people who were no longer able entirely to maintain themselves; and in these respects it was rendered complete by the establishment and subsequent enlargement of the affiliated institution at Brighton, now containing 60 beds for convalescents and for the aged, beds with which the names of M. PAUL CAMBON, the Ambassador, and of M. et Mme. RÜFFER are permanently associated. The French Government, too, justly mindful of the claims of those of its subjects who were assisting to maintain the commercial and industrial intercourse with England, to which both nations owe so much, has from the first been a munificent contributor to the cost of erecting the necessary buildings.

Few events in history, we think, are likely to act more beneficially or to exert a more powerful influence in the direction of peace and civilisation than the friendship between France and this country which is now a happily established fact and which restores the two nations to their proper places in relation to each other. The contemporaries of NELSON and of WELLINGTON were full of an animosity towards France which has long passed away and which it is only worth while to recall in order to point out its completely artificial and accidental character. The wars by which it was fed were not so much wars against France as against a striving for universal empire on the part of NAPOLEON—a strife in which a gallant nation had suffered itself to be led away from its better and earlier traditions by dreams of so-called "glory." We shall not estimate correctly the events thus arising or appreciate their really transitory character unless we remember how the soldiers of ELIZABETH and of HENRI IV. fought

side by side against the somewhat similar dreams of empire of PHILIP of Spain, and how completely France in those days had been at one with us in the defence of civil and religious liberty against a despotism. She fought against us in the days of WILLIAM III. and of ANNE, but the struggle was of the same character as that with NAPOLEON, and England opposed the ambition of LOUIS XIV. as strenuously as she afterwards opposed that of the Empire. The true position of France in Europe is so great and her influence, when rightly used, must be so enormous that those who have striven to restrain this power and influence within their natural bounds should be regarded as her friends rather than as her enemies, and as having contributed to the consolidation of her empire rather than to any curtailment of her legitimate ambitions. At the present time, if undue ambition is to be feared on the part of any country, it is certainly not in France that it must be sought, and we have every reason to expect that our friendship with her and with her allies may exert a potent influence in restraining it, if it should exist, within those legitimate spheres of operation which are provided by the victories of peace, by the rivalries of inventors, by the efforts of the wise to bring about the increase and the diffusion of knowledge. The visit of the PRESIDENT of the Republic to this country has set the seal of his authority upon the growing friendship of two great nations, and his visit to the French Hospital was a fitting testimony of the care which in these enlightened days it so well beseems the great to extend towards the lowly. The English Hospital in Paris and the French Hospital amongst ourselves should afford to the benevolent of both countries additional opportunities of fostering relations by which both have much to gain and which to both are likely to be "twice blessed."

The Local Government Board of Scotland and Public Abattoirs.

DR. FREDERICK DITTMAR, medical inspector to the Local Government Board of Scotland, has drawn up an official report on the provision of public slaughter houses by local authorities and the methods of meat inspection. Though this report is followed by suggestions for improvement[1] it shows very clearly that Scotland is far in advance of England in this important matter. It is satisfactory to find in this report an official endorsement of the principles for which we have contended in these columns since we took a leading part in the campaign against the inefficient control of the meat-supply. In the very first paragraph the report urges that not only the carcass but also the internal organs should undergo an examination "by an expert" before the flesh is placed on the market and offered for food. It will be remembered that some time ago the German authorities refused to admit into Germany the carcasses of cattle slaughtered in England unless the viscera remained attached so that the veterinary inspectors could make a full and proper examination. To insure such efficient inspection the report of the Local Government Board of Scotland insists, first, that animals "should be slaughtered in places under public control"; and secondly, that persons who decide as to fitness for human food should have no interest to serve other than that of protecting the consumer. Consequently they should be employed by, and paid by, "a public authority only"; and "private slaughter-houses, therefore, should be abolished and their place be taken by slaughter-houses under public control." The only exception admitted to this rule is in regard to such scattered communities as the crofters and fishing populations of the Western Highland and the Islands of Scotland. But the beauty of these fine pronouncements rests in the fact that in Scotland this is not merely theoretical. We are told that slaughter-houses belonging to town councils existed in several of the older burghs "almost from time immemorial." Of recent years a number of local Acts have been obtained authorising public slaughter-houses in nearly all the larger towns and many of the smaller burghs. The city of Edinburgh slaughter-house was built in 1851 and since 1865 private slaughtering has been illegal in Glasgow. Dundee had a public slaughter-house in 1876, Falkirk before 1885, Leith in 1863, and Kirkcaldy "from time immemorial." Altogether, out of the 205 burghs of Scotland 60·48 per cent., or 124, of these have public abattoirs. Of course, this represents a much larger proportion of the population as, with the exception of Aberdeen, it is the most populous burghs that have abattoirs. Again, though there are burghs that have no abattoirs this does not mean that they have private slaughter-houses. At Govan and similar burghs on the outskirts of Glasgow and other large towns they do not kill at all but fetch their meat from the public abattoir of the neighbouring town. And so the official report is able to state that from 88 to 90 per cent. "of the total burghal population of Scotland is provided with home-killed meat from slaughter-houses under public control."

These are facts and figures which should rouse the authorities in England and Ireland. If the latter country has the excuse of poverty for lagging behind this cannot be said of England. In Scotland, even in rural and sparsely populated districts, several very poor localities have been grouped together so that they might have a public abattoir between them. For instance, the Upper Deeside district of Kincardineshire and the burgh of Banchory, though their joint population only amounts to 1475 inhabitants, agree to share in the erection of a public abattoir. It would appear that there are 138 abattoirs in Scotland under public control and nine of these are in purely rural districts. These supply 90 per cent. of the population of the towns, or about 2,500,000 people. 340,644 people, or 11·5 per cent. of the town populations, obtain their meat from 154 private slaughter-houses situated in 63 burghs, and there are 563 private slaughter-houses in purely rural districts, with a total population of 1,500,000. Similar statistics in regard to England would constitute a humiliating comparison. In "Our Slaughter-House System," Mr. C. CASH, the author, only succeeded in obtaining information from less than two score English public abattoirs, and even where these existed the private slaughter-houses had not been all abolished. Yet, on the other hand, it would be altogether erroneous to conclude that all is perfect in Scotland. On the contrary, the main purpose of the official publication before us is to show the necessity of further reform. The report

[1] Our Glasgow correspondent summarises these suggestions in our letter from Scotland this week.

urges that no animal should be killed privately if the meat is to be placed on the market. At present pigs intended for curing are generally killed at the place of feeding, on the ground that "driven pork" does not cure well. But this obstacle can be overcome by the provision of sufficient lairage to enable the pigs to rest a few days after their journey and before they are killed. The report then demands that all towns should be compelled to have public abattoirs and that the plan of such structures should be first submitted for approval to the Local Government Board. The cost of construction and upkeep forms a legitimate charge against the public health rate of the district, but excepting in very sparsely populated rural districts the revenue would always prove sufficient to cover the outlay. To make a public abattoir pay, the law, it is suggested, ought to forbid the erection of any other private or public slaughter-house within a fixed radius, for instance, of five miles from a town which has only from 6000 to 8000 inhabitants. In districts where there are no slaughter-houses there should be travelling meat inspectors and the killing of animals intended to be sold for food should take place in the presence of such inspectors. An inspector, if not a veterinary surgeon, ought to have passed the examination held by the Royal Sanitary Institute. A special code should be issued so as to establish throughout the country a uniform standard of meat inspection. Then more energetic measures are needed to prevent the importation of meat. A half-carcass cannot be satisfactorily examined and boned meat cannot be examined at all. On this subject the report says:—

> It has already been pointed out that the examination of dead meat can, under no circumstances, be fully satisfactory, as the internal organs, in which evidence of disease is so largely found, are necessarily absent. The Government of this country should therefore be satisfied of the thoroughness of inspection at the time and place of slaughter and before the meat is exported to this country.

Such are some of the requirements put forward by the Local Government Board of Scotland, and the Scotch are to be congratulated on the fact that they are very much in advance of the English. It is not too much to ask that we in England should have an early opportunity of enjoying similar benefits. As for London, it is needless to say that the metropolis is not only behind Scotland but is not on a level with some of the smaller English provincial towns. Perhaps the Blue Book just published may help to awaken the English public to a keener appreciation of what is urgently needed in this country.

Medical Missions.

"IMPERIAL expansion" has its appropriate celebration in "Empire Day," and among the contributory forces leading up to the former and worthy of due commemoration on the latter is that of the Medical Mission. What that force has been, particularly in the later decades of the nineteenth century, can best be indicated by the word "circumspice." Wherever Great Britain has established a "sphere of influence" in regions savage or semi-civilised, tropical or subtropical, there she can point to the concurrent establishment of the means of rehabilitation, social and moral, prominent in which stands out the Church mission, reinforced by the medical coadjutor as its "right-hand arm." Eloquent illustration of this fact has just been given in Edinburgh at the General Assembly of the United Free Church, whose moderator for the year is the Rev. ROBERT LAWS, M.D., a worthy successor in that chair of the Rev. JAMES STEWART, M.D., honourably associated with himself in the construction and consolidation of Livingstonia, that great bulwark of British power and prestige in Central Africa. On the occasion of his appointment to the post of Moderator an esteemed correspondent of THE LANCET[1] commented on Dr. LAWS's career in the medico-missionary field and gave a forecast of the light which he might be expected to throw on the present and future of that "civilisade" (to use JOHN STUART MILL'S appropriate coinage). That forecast has been amply verified. The "mission," wherever initiated, has been successful in the degree in which it has utilised its medical arm, a policy and a method of "opening the door" of which Dr. LAWS is himself a typical exemplar and expositor. "It is," he said, "a trite piece of history now that PARKER led the way for the Gospel into China with the point of his lancet," while for gaining an entrance into Mahomedan regions no method has been found so effective. This, he proceeded to prove, was seen in the experience of Dr. PATERSON and his colleagues in the work at Hebron, where, received at the outset with curses as enemies, they "were now welcomed with blessings as trusted friends." Nay, more. In the Livingstonia Mission "one remarkable feature had been that all their stations, with the exception of one, had been begun by the medical missionary, and, in the case of that exception, rapid advance took place only after his advent." So much for medico-missionary work if looked at in its broad general effects. But those effects are the outcome, the aggregate, of the work bestowed on individuals. "It was," he says, "the physical need of the individual patient, and the treatment of this need that opened the door to the individual heart with its need of that Gospel which the missionary brought."

In this way, as in every other missionary effort, "the treatment of the individual which, by GOD'S blessing, led to his conversion, added one to the Church, and when this becomes co-extensive with the population there was not only a Christian Church but a Christian tribe or nation." Dr. LAWS continued his exposition of the success that waited on missionary labour when medically reinforced by an eloquent tribute to the educational coadjutor who follows in the track so prepared—the whole system adequately supported and encouraged being conducive to that "Imperial expansion" which is the envy of Great Britain's contemporaries, far behind as those are in the enlightenment and philanthropy of their methods, and in the same proportion inferior in the impression which they produce on the tribe or population under treatment. Not that the medico-missionary is a civilising agent peculiar to the English-speaking world.

As already pointed out, the Portuguese and the Italians, even so far back as the first post-Reformation decades, were pioneers in missionary exploration and evangelising, aided by skill in the healing art; while the noble work of the Capuchin MASSAIA in the Galla country, of which (with its extinction of small-pox and the consequent triumph of his mission) a vivid account is given in the publication

[1] THE LANCET, Nov. 30th, 1907, p. 1550.

(Rome, 1895) of the "Missionari Catholici Italiani," must ever remain in our memories. But even those efforts—and particularly this last—lacked the systematic support and the "staying power" characteristic of Anglo-Saxon enterprise, and they remain rather as evidence of "the might have been" than of the *fait accompli*. With such examples of failure, past and contemporary, Great Britain will have herself to blame if she does not keep in the van of "Imperial expansion" so auspiciously begun, so fraught with future augury, if she does not vouchsafe all encouragement and support to the efforts, in which her various Churches compete in honourable rivalry, for the rehabilitation of her ever-increasing subject-races by the methods so conspicuously successful of the medico-missionary organisation.

Annotations.

"Ne quid nimis."

THE STANDARDISATION OF TETANUS ANTITOXIN.

IN a United States Treasury Bulletin[1] Dr. Milton J. Rosenau and Dr. John F. Anderson describe the American method of standardising tetanus antitoxin and compare it with the German method described by Behring, the French method of Roux, and the Italian method after Tizzoni. They state that the European standards are admitted to be unsatisfactory and for the most part inaccurate, further that they are complicated and difficult to carry out. The American method is the result of several years' work in the Hygienic Laboratory and it is believed that it will commend itself for its simplicity, directness, and accuracy. The standard toxins and antitoxins are preserved under special precautions to prevent deterioration and are tested against each other reciprocally so that the least alteration in either may be detected. The unit is based upon the neutralising value of an arbitrary quantity of antitoxic serum but the antitoxin is not issued to other laboratories for the purpose of control, as is the case with diphtheria antitoxin. All the tetanus antitoxic serums for use in man upon the American market are now measured against a stable, precipitated tetanus toxin, the test dose of which has been carefully determined. Before the establishment of the American standard the tetanus antitoxins upon the market varied widely in the unit strength claimed for them and were for the most part comparatively weak in antitoxin potency. The American official immunity unit for measuring the strength of tetanus antitoxin is ten times the least quantity of antitetanic serum necessary to save the life of a guinea-pig weighing 350 grammes for 96 hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory. In other words, one-tenth of a unit of the antitetanic serum mixed with 100 minimal lethal doses of the standard toxin contains just enough free poison in the mixture to kill the guinea-pig in four days after subcutaneous injection. The antitoxic serum for the purposes of this standard was obtained from a single horse. The serum was dried, powdered, and preserved in vacuum tubes under the influence of pentaphosphoric acid, in darkness, at a temperature of 5° C. While the antitoxin so prepared is stable, duplicates are made from time to time so as to guard against loss or change and to insure the permanence of the standard. In order to obtain trustworthy and comparable results it is necessary to take into account all the factors concerned, including the composition of the poisons, their concentration, the diluting fluid, the length of time during which the mixtures are allowed to stand, the site of inoculation, and other factors. All the known factors have been considered in devising this method of standardising tetanus antitoxin which is described in detail in the Bulletin. The necessity for an accurate standard is shown by a table representing the differences in potency and in the methods of testing tetanus antitoxin before the adoption of the American unit. It is now well known that when the symptoms of tetanus have developed the toxin has combined with the motor nerve cells and that the union between the cell and the poison is too strong for the antitoxin to break up. But if the antitoxin is given in time the toxin is neutralised and rendered harmless. Tetanus antitoxin is therefore an exceedingly valuable prophylactic and for this purpose it is coming into more general use in human and in veterinary practice.

[1] Bulletin No. 43, Hygienic Laboratory, United States Public Health and Marine Hospital Service, Washington, D.C., March, 1908, pp. 59.

THE MIDDLESEX HOSPITAL AND CANCER RESEARCH.

THE weekly board of the Middlesex Hospital reported to a recent meeting of the court of governors that a special committee had been established which will have for its sole object the promotion of the interests of the Cancer Charity and the collection of such sums as shall place the advance of the research work beyond the impediment of pecuniary anxiety. An urgent public appeal is being made for funds to meet the expenses of the current year, £1000 of the requisite £2500 having been already subscribed. At the same court, which was presided over by Field-Marshal Lord Grenfell, Major-General Lord Cheylesmore, C.V.O., moved the adoption of the hospital's report, which was seconded in a very able speech by Mr. A. Pearce Gould. This was largely directed to warning those who were interested in the Cancer Research Fund against becoming disheartened by the comparative slowness and the apparent insignificance of the steps which it was making in its advance against the hidden strongholds of malignant disease. He pointed out the necessity of the patient and laborious collection of facts bearing upon every side of the question as being the sure foundation upon which successful treatment of the disease must ultimately rest. In this connexion he adduced the recent reopening of a lying-in ward at the Middlesex Hospital, saying that it was a demonstration of the advance in the knowledge of another dread disease—puerperal fever—the prevalence of which in hospitals not so many years ago had made such wards simply disastrous for their inmates. The benefits which poor parturient women now infallibly derived from them were due entirely to the anxious, persistent, and devoted investigation in the laboratory which had revolutionised the whole practice with regard to midwifery. He confidently looked forward to an equally signal victory over cancer which would be attained by similar means. We agree with Mr. Gould that patient research will ultimately solve the problem, but we are not without hope that some investigator may arise who will be possessed of the true scientific imagination to reduce a thousand isolated facts into the compass of apparent law, the enunciation of which will suggest further investigations for its verification until the inner heart of the mystery is laid bare. It is only once in several generations that a genius arises who could, for instance, be led directly from a crystallographic study of tartaric acid to the elucidation of the causes of puerperal septicæmia by sheer scientific insight, but the conquest of cancer awaits such a one as Pasteur and we would fain believe that he will appear in this country. Meanwhile the continued minute study of the natural history of cancer by every means at our disposal is worthy of the fullest measure of support, and, indeed, the money already expended has been justified by

its first fruits, for Mr. Gould was able to tell his supporters that notably in the electrical department in a large number of cases great good had been done to the poor patients suffering from cancer who went to the Middlesex Hospital for relief.

INSTANTANEOUS RADIOGRAPHY.

AN interesting demonstration was given on this subject at the London Hospital on May 27th last when very satisfactory radiographs were made of some cases of aneurysm in from one-fifth to half a second. While so-called instantaneous radiographs were made some years ago by several workers it was not until quite recently that the method has been so far perfected that it could be adopted as a regular procedure and it is chiefly due to Dr. Graedel of Nauheim that it has been brought within the sphere of every-day radiography. It may surprise some to find that very little modification of their existing x ray apparatus is necessary so long as a high voltage continuous current is available. The best results are obtained with the 200 volt to 250 volt current from the main. A very large primary current is used, sometimes as much as 90 ampères, through a special triple anode electrolytic interrupter. There is no danger to existing cables, fuses, and so on, owing to the very short time during which the current is flowing, and for the same reason the x ray tubes are not damaged, though the current through the latter may be from 20 to 50 milliampères or more. While excellent results are obtained with the tube, say, 24 inches from the plate, good results are also obtained at a distance of 80 inches and in this case there is so little distortion that the parts are represented at almost exactly their natural size—so nearly so that an orthodiagraph is unnecessary. This and the convenience of dealing with fretful and fidgety patients, such as children, make this new modification one of considerable value. While no doubt all makers of x ray apparatus will be supplying outfits specially designed for this work it is only fair to state that it has been first introduced into this country by Mr. K. Schall, and that it was in the factory of the firm of which he is a member that the technical details were worked out. The firm also provided the apparatus used in the demonstration at the London Hospital.

THE NECESSITY FOR OBTAINING THE PATIENT'S CONSENT TO OPERATION.

THE necessity for obtaining the patient's consent to operation may seem too obvious to require discussion, but cases in which the question is not so simple as might be imagined occur from time to time. In the *Cleveland Medical Journal* for May Professor Alfred Clum has discussed some cases which are of considerable interest. In Minnesota a patient consulted an aural surgeon for deafness of the right ear. There were a large perforation in the lower portion of the membrana tympani and a polypus in the middle ear. The surgeon advised operation, to which the patient consented. At the latter's request his family physician was present at the operation. When the patient was under the anæsthetic the surgeon examined his left ear and found that it was in a more serious condition than the right and in greater need of operation. He found a large perforation high in the membrane and the bone of the inner wall of the middle ear necrosed. He called the attention of the patient's physician to the condition and recommended that the operation should be performed on the left ear. To this no objection was made. The patient had not complained of any deafness in this ear or known of any trouble in it. The operation was successfully performed but after it the hearing of the left ear was seriously impaired and the patient brought an action for assault and battery against the surgeon. The court held that the operation was a violation of the rights of the patient unless the surgeon could show that the patient had explicitly or implicitly consented to an operation on the left ear. The jury returned a verdict for the plaintiff. In another case a woman the subject of epilepsy consented to some minor operation on the pelvic organs which took place in hospital. She left the hospital saying that she would consent to no further operation. She was induced to return and a major operation was performed. An internal organ (not specified) was removed. There was some evidence that the anæsthetic for the operation was administered to the patient when she was asleep. The surgeon testified that her husband had given his consent to the second operation. The court held that whether such consent was obtained or not was unimportant, because the wife's consent was necessary. A verdict was given for the plaintiff with exemplary damages—$3000. On appeal the verdict was upheld and the court regarded the operation as a mutilation which the surgeon had no right whatever to perform. This case is the precedent in the American courts that the consent of a husband is no legal substitute for the consent of his wife when she is the subject of operation.

THE APPOINTMENT OF POLICE SURGEONS FOR EDINBURGH.

THE *Scotsman* recently contained a letter over the initials "A. W." concerning the rates of pay which the town council of Edinburgh is offering to the police surgeons who are to be appointed to the districts of the city. According to him the highest salary is to be £80, the lowest £15, and the average about £50. The duties, he says, are onerous enough, including a daily visit to the police-station, attention to prisoners, sick constables, and so on. He not unnaturally asks the town council whether it regards wages below those of a scavenger as suitable for the remuneration of educated professional men. "A. W." further asks what a trade union would say to such a scale of pay and we must answer him that medicine is in the hands of a liberal profession in this country and not of a trade union, although this may offer cold consolation to those ground under the iron heel of unfair contract practice. This case at Edinburgh, however, seems to be one for which some remedy might be found by the united action of the medical practitioners in the neighbourhood of the various districts concerned, and an effect might even be produced by individual representations to some of those councillors who have the control of the public purse-strings, which, according to the *Scotsman's* correspondent, are opened liberally enough in respect of the salaries of other officials or in the cause of "municipal banquets and miscellaneous entertainments."

THE BOMBAY MEDICAL CONGRESS.

WE desire to call the attention of all our readers who are interested in Indian medical affairs and tropical medicine to an announcement which appears in our advertisement columns of a Medical Congress which will be held in Bombay in the early part of next year. His Excellency the Governor of Bombay will preside over the congress, and amongst the vice-presidents will be the members of his council, the Director-General of the Indian Medical Service, the Principal Medical Officer H.M.S. Forces in India, the Surgeon-General with the Government in Bombay, the Senior Medical Officer of the Royal Navy in Bombay, the Principal Medical Officer of H.M.S. Forces, Poona Division, and representative native medical practitioners. The general secretary and editor of the Transactions will be Lieutenant-Colonel W. E. Jennings, I.M.S., and the central committee consists of representatives of the official and non-official branches of the medical profession in India. The special objects of the congress will be the consideration of tropical diseases

and sanitation as applied to India; the session will extend over four days and the subjects will be considered in six sections—namely: I., Cholera, Dysentery, Enteric Fever, and Tropical Diarrhœa; II., Malarial Fever, Plague, Leishman-Donovan Body Invasion, and Relapsing Fever; III., Parasitic Insects, Snake Venom, Beri-beri, Mycetoma, Elephantiasis, and Leprosy; IV., Sewage Disposal in India, Water Supplies, Disinfection, and General Sanitation; V., Ophthalmic Surgery Urinary Calculi, and Miscellaneous Papers on Tropical Surgery; and VI., Exhibition of Pathological Specimens and Lantern Slide Demonstration. In view of the great advances which are being made by the sanitary service of India we have no doubt that the forthcoming congress will be productive of very useful results for that and other tropical countries, and we trust that the profession in England will avail itself of the general secretary's invitation to contribute papers for the consideration of the central representative committee.

THE FORMATION OF A MEDICAL BENEVOLENT SOCIETY FOR THE EAST AND NORTH RIDINGS OF YORKSHIRE.

IN the East and North Ridings of Yorkshire although the need has long been felt of such a society and the question of its formation has been raised on many occasions it is only recently that any definite action has been taken. Some months ago a provisional committee was formed in Hull which, after investigating the matter, decided that the formation of a society on the lines of the West Riding Medical Charitable Society was most desirable, and the views of the whole of the medical practitioners (nearly 500 in number) in the East and North Ridings and the city of York were obtained by circular letter. The response was so satisfactory that a meeting was held at York on May 21st and the society was definitely formed. More than 100 members have already joined, including a large number of life members. The annual subscription was fixed at 1 guinea and for life members at 10 guineas. Only members or their relatives can participate in the benefits. The first officers of the society are: President, Dr. J. Mitchell Wilson, Beverley. Vice-Presidents, Mr. W. H. Jalland, York; Dr. F. W. A. Godfrey, Scarborough; Mr. R. H. B. Nicholson, Hull; Dr. C. A. Lee, Hull; and Dr. H. J. C. Godfrey, Bridlington. Treasurer, Dr. E. M. Hainworth, Hull. Honorary secretary, Dr. Edward Turton, Hull. From the support already received the future success of the society would seem to be assured.

THE FRANCO-BRITISH EXHIBITION AND SUNDAY OPENING.

THE question of the Sunday opening of this exhibition is now being much debated, and in this connexion it is interesting to quote the editorial article which appeared in THE LANCET of April 16th, 1853, referring to the opening of the Crystal Palace on Sunday, the Palace after it had been used for the Great Exhibition of 1851 having been removed to Sydenham:—

Those who are industriously bent upon resisting the opening of the Crystal Palace at Sydenham on Sundays, seem to consider that their other arguments will be strengthened if they can enlist the support of the medical profession. A petition is now being actively circulated amongst medical practitioners, which appears to us to be singularly inconsistent in fact and reasoning. The document sets out with the following proposition:—

> That your petitioners, from their acquaintance with the labouring classes and with the laws which regulate the animal economy, are convinced that a seventh day of rest, instituted by God, and co-eval with the existence of man, is essential to the bodily health and mental vigour of men in every station of life.

We may freely admit the proposition; but how does it follow that escape from the dingy town, and "fresh air and recreation" in Penge Park must be "pregnant with disastrous results to the health of the labouring classes"? There may possibly be objections of a moral and religious character against the measure—and these it is not our province to consider—but certainly it is neither reconcileable with our knowledge "of the laws which regulate the animal economy," nor with the plainer laws of common sense, to contend for the closing of the Crystal Palace on Sundays on sanitary or medical grounds.

It will be seen that 55 years ago the same subject was being debated with as much vigour as it is this year, and it would not be surprising if the partisanship of the medical profession were attempted to be enlisted in the same manner that it was at that length of time ago. Medical men themselves who work seven days in the week should know a good deal about the effects of Sunday labour from a personal point of view, and it is possible that they may be represented as desirous of seeing the exhibition closed on Sundays in the interests of the persons employed in its management. On the other hand, it may be argued that the enormously increased receipts which would follow Sunday opening would enable the directors to enlarge their staffs and so to provide that their employees should get one day in seven free. The question of the opening on Sundays of the Franco-British Exhibition is obviously a difficult one, but we see little reason to contend for its closing on sanitary or medical grounds, even if the "fresh air" of Shepherd's Bush of 1908 be not quite comparable with the "fresh air" of Penge Park in 1853.

THE ILLINOIS STATE BOARD OF HEALTH AND ITS CRUSADE AGAINST TUBERCULOSIS.

WE have received copies of the seventh revised edition of a circular on "The Cause and Prevention of Consumption," issued by the Illinois State Board of Health and written by Dr. James A. Egan, secretary to the Board. This Board, with commendable public spirit, has started an active crusade against tuberculosis in the State of Illinois, and one of its chief objects is to diffuse knowledge among the general population in regard to the prophylaxis and treatment of this disease which, it is stated, causes 150,000 deaths annually in the United States and between 7000 and 8000 deaths in the State of Illinois. We learn from a cutting from the *Journal*, Springfield, Illinois, of Feb. 23rd that it is intended to distribute 100,000 copies of the circular to the physicians and school-teachers in the State, to University students, charitable organisations, clubs, churches, and other similar bodies. It is hoped that by the coöperation of the medical profession it will be possible to place a copy in the hands of every consumptive person in the State. Copies can be obtained without charge by any citizen in Illinois who desires to receive one. The circular itself is in the form of a pamphlet of 60 pages inclosed in a cover. It is liberally illustrated and is written in such a manner as to be easily intelligible to the layman, for whom it is, of course, primarily intended. After an introduction describing the prevalence of the disease and the ravages which it makes, the importance of prevention is pointed out and the phrase "No spit, no consumption" is repeated in thick type on many pages as a serious warning. General directions are given to consumptives as regards their mode of life, their diet, and their home treatment. Various illustrations are given of suggestions for open-air or "out of-door" treatment at home, such as that by sleeping in a porch, verandah, or lean-to. The useful "window tent" introduced by Dr. S. A. Knopf of New York is also figured and described. Directions for the general hygiene of the sick room are given and excellent information is afforded in regard to disinfection. Nearly half the book is devoted to the treatment of consumption in Illinois and to a consideration of the need for a State hospital or sanatorium for the care of consumptives. Illustrations are given of some

of the other sanatoriums in the United States, notably of the Adirondack Cottage Sanatorium at Saranac Lake. The Illinois State Board of Health is to be congratulated on the strenuous efforts which it is making to deal with this important problem and on the really admirable pamphlet which Dr. Egan has produced for it. If an abridged form of it could be supplied to many of the consumptives in this country it would serve a useful purpose.

HOSPITAL STOPPAGES IN THE NAVY.

THE *Naval and Military Record* in a recent issue directs attention to an ancient naval grievance, the existence of which is one of those mysteries that none but a Government office can attempt to explain. A man who contracts venereal disease is allowed 30 days' hospital treatment on full pay, but a man who, through no fault of his own, contracts other forms of disease is liable to certain reductions of pay whilst in hospital: after 30 days every naval patient is subject to these stoppages, irrespectively of the nature of his malady. The stoppages are slight but irksome, and the distinction drawn between the different classes of disease in their imposition is so unjust as to be almost ludicrous. The paper from which we quote remarks pertinently that sailors do not contract fevers purposely, or stop in hospital for the pleasure which they derive from it, but we cannot agree with its further dictum that every man who contracts venereal disease should have a portion of his pay stopped during the whole period of hospital treatment, for we hold that the disease brings sufficient punishment of itself. Moreover, the State secures the services of men under conditions which detach them from home influences and render marriage imprudent and in many cases impossible, whilst the temptations to which Jack ashore is exposed are notorious. The State at the same time, with what seems to many a pusillanimous dread of uninstructed public sentiment, enacts no preventive regulations to check venereal disease at any of the great naval stations. We would rather reserve the hospital stoppages for men who contract the disease and neglect to report it immediately they are aware of the fact to the medical officer of their ship or division, and who are detected subsequently, for such men injure themselves and the service and are, moreover, very liable to infect others.

THE HAMPSTEAD GENERAL HOSPITAL.

DURING the past year we have had on several occasions to refer to the affairs at the Hampstead General Hospital, which ultimately led up to its amalgamation with the North-West London Hospital. The constitution of the combined hospitals has been finally settled at a recent meeting of the council, at which it was decided that the regular out-patient department at present in existence at Hampstead should be closed and any necessitous cases should be referred in future to the department at Kentish Town. There is no shadow of doubt that an out-patient department is needed in that very poor district, and we think that the council has acted wisely in closing the department adjoining the hospital on Haverstock Hill except as regards the attendance of casualty cases. The existence of that department has been a standing grievance to many practitioners in the neighbourhood, and, at a time when the relations between the hospital authorities and the local medical men have been so unfortunately strained owing to a complexity of causes, the removal of a department which was very generally agreed to be unnecessary at Hampstead will, we hope, do something to smooth out the whole matter. With regard to the recent change of staff, we sympathise fully with the position of the gentlemen who have served the hospital so well and faithfully until the present rearrangement brought about their voluntary retirements, and we admire the manner in which they forfeited their personal interests in making common cause with their local professional brethren, but there is no doubt that the action of the hospital council was to a great extent forced by the fact that it has increased to such a size that it could not afford to become independent of King Edward's Hospital Fund, and this being the case the solution that has been arrived at was inevitable, hard as it was upon individuals. Now that the matter is *fait accompli* we can only express a hope that the utility of the institution will not be affected by anything of the nature of a professional boycott in the neighbourhood, for such a procedure could only harm the charity in question without in any way advancing the cause of those who desired the staff appointments to remain in the hands of local medical men.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

THIS Board was constituted in 1904, with the approval of the governing bodies of University College, King's College, and the East London College, for the purpose of holding a combined annual examination for entrance scholarships and exhibitions tenable at those colleges and at such other "schools" of the University of London as might afterwards agree to make use of the organisation of the Board. An arrangement has now been entered into with various other colleges and medical schools and a combined examination for medical entrance scholarships and exhibitions will be held in September next. The aggregate value of these scholarships and exhibitions amounts to £1500 and they are 23 in number. They are tenable in the faculties of medical sciences of University College, King's College, and in the medical schools of King's College Hospital, St. George's Hospital, Westminster Hospital, and the London School of Medicine for Women. The examinations will be held in London by the London Inter-Collegiate Scholarships Board on Sept. 22nd and following days. Candidates will be admitted to the examination for the scholarships and exhibitions under the various regulations governing them. For full particulars and entry forms application should be made to the secretary of the board (Mr. Alfred E. G. Attoe, University College, Gower-street, London, W.C.), or to the deans (or secretaries) of the medical schools concerned.

THE REFINING OF SALT.

IT may not be strictly a medical subject, but common salt is for domestic purposes so closely associated with our daily life, to say nothing of its importance in manufacture, that it may be of interest to refer to a great change, which has already got beyond the experimental stage, in the manner of its refining. No change in the principle of the refining process has taken place since before the time of the Romans—the solution of the rock-salt in water, with its subsequent evaporation. In the new process, called the Tee process after the name of the inventor, water is not used. The rock salt, impure and discoloured, as it is often found, is melted and purified by fire. While liquefied the impurities are precipitated and when the liquid cools and becomes solidified in a mould the salt is found at the top and the impurities below, while between the two is a distinct line of demarcation. A demonstration of the new process was given quite recently at some works near St. Helens. The rock salt was carried in barrows to the top of a huge oven and dropped in on to a metal plate heated to whiteness by gas. Rock salt requires for its melting a temperature of 1400° F., to which point the table evidently was heated, for it flowed off it as a liquid and fell into a recess below. After a time a quantity was drawn off into a large mould and compressed air was forced into it till a violent ebullition was set up to facilitate the precipitation of the impurities to the bottom of the mould. After the mould was allowed to cool it was found that all the

impurities had sunk to the bottom, leaving pure white solid salt at the top. The impure portion of the block is separated easily by a blow with a chisel. The pure salt may then be ground to any degree of fineness required. The new method is said to be much cheaper than the old one and much more economical of time, taking hours only while the old one required days. Another advantage is that by the fire process the salt is freed from water and in this anhydrous condition is very slow in absorbing moisture from the atmosphere, so that no ingredients need be added to prevent it from "caking." Some hundreds of tons have been refined, tested, and analysed with, it is said, quite satisfactory results, and works on a large scale are to be erected where the new method can be carried on.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

IT will be remembered that in Lord Mount-Stephen's letter to the Prince of Wales which accompanied his recent splendid donation to King Edward's Hospital Fund he expressed a hope that the friends of the fund would unite in raising the further capital sum required to increase the permanent income of the Fund to £75,000 a year, the income from subscriptions being now estimated at the like sum. His Royal Highness has now contributed £500 himself and has received from Lord Revelstoke a gift of £500, from Mr. Frederick M. Fry £250, and from an anonymous donor £1000 as contributions to this object.

THE DALRYMPLE HOME FOR INEBRIATES: AN INTERESTING REPORT.

THE annual report of the Dalrymple Home for 1907 shows a continuance of the steady progress which has marked the history of this institution under the management of its present medical superintendent, Mr. F. S. D. Hogg. During the year 36 patients were received and 39 were discharged. With regard to the patients received Mr. Hogg notes with regret that only ten were inebriates certified under the Act, the other 26 being private patients, over the duration of whose stay under treatment the physician can exercise no legal control. It is an extremely gratifying fact that, even under these very unfavourable conditions, the after-history of traceable cases should show so high a proportion as 62 per cent. under the rubric "doing well," while only 22 per cent. are returned as "not improved." It is interesting to note that Mr. Hogg's wide experience has satisfied him that the sudden and complete stoppage of alcohol is not attended by any of those risks to the health of habitual drunkards which many people, and, as Mr. Hogg drily observes, especially many patients, attribute to this drastic method. On the contrary, he has found that appetite and natural sleep are restored very much sooner when this mode of treatment is followed than when the use of alcohol is gradually discontinued. A matter on which Mr. Hogg lays very special stress and regarding which he speaks with exceptional authority, is the present unsatisfactory state of the law which so deplorably hampers the application of institutional treatment to drunkards who do not possess the further qualification of being criminals. As matters stand, a man may be in a condition of chronic alcoholic or drug poisoning or may be periodically in an unfit condition for decent society, but so long as he avoids criminal acts and is not persistently in such a state that he may be classed as insane, he is free to squander his capital, to ruin himself and his family, and to drink or to drug himself to death; and unless he decides to place himself under treatment nothing can be done to save him. The remedy which Mr. Hogg advocates is that inebriates of this class should be certified much in the same way as lunatics are certified and that they should be placed compulsorily under treatment before they have financially, mentally, and physically foundered. We find this simple plan reasonable; something of the sort should certainly be adopted when the Government fulfils its promise of introducing legislation to amend the Inebriates Acts.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

THE following are particulars of the course of lectures and demonstrations which have been arranged to take place at the rooms of the Incorporated Society of Medical Officers of Health in London during Whit-week:—

Tuesday, June 9th.—3 P.M.: Opening Meeting in the rooms of the Society, 1, Upper Montague-street, Russell-square, London, W.C. Address by Dr. James Kerr, chief medical officer of the London County Council Education Department.

Wednesday, June 10th.—11 A.M.: Lecture on "Medical Inspection," by Dr. C. J. Thomas (L.C.C. Education Department). 2 P.M.: Visit to schools. 5.30 P.M.: Lecture, "Anthropometry," Dr. F. C. Shrubsall; Physical Exercises, Dr. Shrubsall.

Thursday, June 11th.—10.30 A.M.: Demonstration of Special Cases, Dr. Kerr (L.C.C. Education Offices). 11.30 A.M.: Office Routine; Ringworm Examination, &c., Dr. Thomas (L.C.C. Education Offices). Visits to Schools. 2.30 P.M.: Lecture, "Eyes and Ears," Dr. Kerr. 3.30 P.M.: Lecture, "School and Home; Infectious Diseases," Dr. H. Meredith Richards. 5.30 P.M.: Lecture, "School Clinics," Dr. A. H. Hogarth.

Friday, June 12th.—10.30 A.M.: Demonstration at London County Council Education Offices, Dr. Kerr. Visits to Schools. Further arrangements are in contemplation.

An exhibition of appliances, outfits, record systems, office requisites, and so on, will be open daily from 10 A.M. to 6 P.M. All desirous of attending the lectures are requested to communicate with Mr. W. A. Lawton, at the offices of the Incorporated Society of Medical Officers of Health, 1, Upper Montague-street, Russell-square, London, W.C.

THE SIXTEENTH INTERNATIONAL CONGRESS OF MEDICINE AT BUDAPEST, 1909.

A MEETING of the National Committee for Great Britain and Ireland of the Sixteenth International Congress of Medicine was held at the rooms of the Medical Society of London on May 28th, Dr. F. W. Pavy, F.R.S., being in the chair. The National Committee was reconstituted by incorporating 22 new members with the former committee. It was proposed by Mr. W. H. H. Jessop, seconded by Mr. L. Eliot Creasy, and carried unanimously, that the officers of the new committee should be Dr. Pavy, President, and Mr. D'Arcy Power and Dr. Clive Riviere, honorary secretaries. Letters were read from the general secretary of the Congress stating that it would be held at Budapest from August 29th to Sept. 4th, 1909, under the patronage of his Imperial and Apostolic Royal Majesty Francis Joseph I. It was further reported that certain changes had been made in the method of obtaining scientific communications; no members or societies had been invited directly to contribute but all papers and discussions had been left to the initiative of individuals. In these circumstances the National Committee felt that it was necessary to urge those who proposed to read papers to send in the titles to the general secretary (Professor Emil Grósz, Esterhazy-utcza 7, Budapest VIII.) as soon as possible, because it is very desirable that the medical profession in the United Kingdom should be adequately represented at the Congress. The work of the Congress is divided into 21 sections of which the sixteenth section, Otology, is to be held simultaneously with the Eighth International Congress of Otology. The remaining sections are Anatomy and Embryology, Physiology, General and Experimental Pathology, Microbiology (Bacteriology) and Pathological Anatomy, Therapeutics, which includes Pharmacology, Physical Therapeutics and Balneology, Internal Medicine, Surgery, Obstetrics and Gynæcology, Ophthalmology, Diseases of Children, Diseases of

the Nervous System, Psychiatrics, Dermatology and Venereal Diseases, Diseases of the Urinary Tract, Laryngology, Otology, Stomatology, Hygiene and Prophylactic Medicine, Medical Jurisprudence, Military and Naval Hygiene, and Tropical Diseases. There will probably be the usual reduction in railway fares for those who attend the Congress but no details are as yet forthcoming. Should a sufficient number of members from Great Britain and Ireland signify their intention of attending it may be possible to obtain a special through train from Boulogne to Budapest. The cost of membership is 25 crowns (which is approximately £1 sterling) for each member and half that amount for members' wives and daughters. The money can be remitted by post-office money order payable to Professor Dr. Elischer, treasurer of the Congress, at the current rate of exchange.

THE death is announced of Dr. Prior Purvis of Blackheath at the great age of 95 years. Dr. Purvis obtained the degree of M.D. London in 1842.

THE President of the Board of Education has appointed Miss Janet M. Campbell, M.D. Lond., to the Medical Department of the Board.

THE annual banquet of the Coroners' Society of England and Wales will be held at the Holborn Restaurant, London, on Thursday, June 18th, at 6.45 for 7 P.M. The honorary secretary is Mr. Walter Schröder.

THE Hunterian Society has decided to award a silver medal annually for the best essay by a general practitioner embodying the results of original observations. Intending candidates can obtain full particulars from the senior honorary secretary, Dr. W. Langdon Brown, 37A, Finsbury-square, London, E.C.

THE annual Bolingbroke lecture will be delivered on Friday, June 12th, at 9 P.M., before the South-West London Medical Society, at the headquarters of the 4th Volunteer Battalion East Surrey Regiment (opposite Clapham Junction Station), by Dr. David Ferrier who has taken as his subject "Hysterical Paralysis." Medical men other than members of the society are cordially invited.

THE Harben lectures (1908) of the Royal Institute of Public Health will be delivered in the lecture theatre of the Institute on Wednesday, June 10th, 17th, and 24th, at 5 P.M., by Professor George H. F. Nuttall, M.D., D.Sc., F.R.S., Quick Professor of Biology in the University of Cambridge, on the following subjects:—Lecture 1, Ticks, their Biology and Structure; Lecture 2, Spirochætosis in Man and Animals; and Lecture 3, Piroplasmosis. To these lectures all who may be interested are cordially invited.

EASTBOURNE WORKHOUSE.—It is not at all surprising to learn that the Local Government Board will not permit of any further extension of the old workhouse premises at Eastbourne. The guardians had hoped to provide for their increasing indoor poor in this way but met with a prompt refusal. The present buildings, originally cavalry barracks, were all very well when workhouses were chiefly for the relief of the able-bodied and not the sick, the aged, and the infirm, who now greatly preponderate, and in view of the great changes that have come over Poor-law administration, particularly as regards the nursing of the sick, it seems a wonder that the guardians were not called upon to build new premises some years ago. The board has now decided to build a new workhouse on its estate at Willingdon to accommodate 550 inmates at a cost of £50 per bed for the able-bodied, and £100 per bed for the infirmary inmates. This decision was only arrived at by a very narrow majority, several guardians favouring delay until the report of the Poor-law Commission was issued. Of the present inmates 102 are over the age of 70 years.

AMERICA'S TRIUMPH IN PANAMA:

THREE YEARS' MEDICAL AND SANITARY RECORD IN THE CANAL ZONE.

BY JOHN GEORGE LEIGH.

IT was my privilege some three years ago to contribute to the pages of THE LANCET a series of articles[1] explanatory of certain climatic and hygienic problems then facing the United States Administration in the inaugural stages of the stupendous enterprise which it had undertaken and pledged itself to achieve in the Central American isthmus. In these I expressed a firm conviction that, despite some initial errors (not, I trust, unkindly criticised), and many visible and yet undisclosed difficulties, success would crown its efforts; basing my confidence—not upon the feasibility of the project, the skill of modern engineers, or the command of immense monetary resources—but upon the probability of a satisfactory reply being forthcoming to the following question: Can the health conditions of the isthmus be so ameliorated as to prevent, during the period of canal construction, a recurrence of the appalling mortality among the labourers which accompanied the building of the Panama railroad and the work of excavation along the canal route in the days of the de Lesseps Company? In the course of my remarks I referred at considerable length to the eventful and usually lugubrious history of the isthmus, the latter's evil reputation as a hotbed of malaria and yellow fever, and the misgivings with which sincere well-wishers of the enterprise regarded a then threatened radical modification in the design of the canal. Superficially, it seemed a matter of little moment, from the standpoint of health conditions, whether the canal were built with a summit level and locks or excavated throughout the entire distance to 35 or 40 feet below the mean level of the ocean. It is happily unnecessary to-day to recall the arguments with which I sought to controvert this assumption and to demonstrate, on the contrary, that the question was of paramount importance, for the sea-level canal—thanks to the strenuous opposition of the few rather than the good sense of the many—has gone the way of the Nicaragua, Darien, and other more or equally specious projects for uniting by an artificial navigable highway the waters of the Atlantic and Pacific oceans.

It may, however, be pointed out that the fear expressed in June, 1905, was amply justified, for early in the following year a majority (including all the foreign members) of the Board of Consulting Engineers, to whom had been delegated consideration of all the plans, decided to recommend, for final adoption by President Roosevelt and Congress, a waterway everywhere brought down to sea-level. This result was hailed with satisfaction from two quarters: by the men who honestly believed that such a canal, when completed, would offer superior advantages to commerce, and by others interested in the trans-continental railroads, who remained faithful to the tradition of supporting that rival enterprise which promised to be most difficult and dangerous and costly in time and money. Their joy, however, was but short-lived, for, side by side with the recommendation to which I have referred, the President and Secretary of War were able to consider reports from the minority of the Consulting Board and the then Isthmian Canal Commission and chief engineer, each strongly favouring adherence to the high-level project as not only more desirable from technical and economic standpoints but also as promising superior efficiency. The arguments advanced in these documents seemed, and indeed were, so conclusive that Congress, after some months of useless talk, abandoned its earlier and newly revived predilections and decided to vote the required appropriations, leaving to the President, his advisers, and nominees unfettered discretion in determining and building such type of canal as appeared to them desirable.

In my first article, referring to the impending conflict, I wrote: "It seems not unreasonable to suggest that, before the fateful decision, the last word should be spoken not by the aspiring engineer but by the profession which will be held mainly responsible should the prophecies of ill be justified by events." Fitting regard was, of course, given by the Executive and Congress to engineering and commercial considerations, but no one will deny that both in committee and open debate the really determining arguments were

[1] Sanitation and the Panama Canal: the Solution of Certain Climatic and Hygienic Problems, THE LANCET, June 3rd (p. 1530), 10th (p. 1597), and 24th (1728), 1905.

those having relation to topography, climate, and hygiene. It was, in brief, impossible to avoid the conclusions that the more disturbance there was of the low-lying, malaria-laden marsh lands, and the longer the time devoted to the work of canal construction, the greater must be the risk of abnormal sickness and mortality among the labourers and their supervisors, and this quite regardless of the measure of success, large or small, attending the operations of the medical and sanitary departments.

Since the sea-level project was dismissed from consideration as a practical alternative to the proposed canal with locks the isthmus has been the theatre of remarkable activity and continued valuable work. Appreciation of the last-mentioned was, however, for a long time overshadowed by bickerings and discord among the many administrative departments, the intrigues of politicians at Washington, and the persistence with which sensation-mongers, not always of the usual irresponsible type, devoted themselves to the apparently congenial occupation of "smelling out" scandals and threatening lurid "revelations." Among those who took part in this campaign were, it is regrettable to recall, some members of the medical profession, whose allegations for the most part were based upon the distorted and unsubstantiated testimony of dismissed or disgruntled employees or, at the best, a few days', ofttimes few hours', personal experience of the isthmus. The situation at length became so unendurable, and even dangerous, that it was with positive relief that well-wishers of the enterprise received the announcement of the revolutionary administrative changes of March and April of last year.

These changes placed the government of the Canal Zone and the work of canal construction, actually as they had already been in theory, in the hands of the War Department and freed both from the incubus of political interference. All the members of the then existing and newly reconstituted Canal Commission were induced to resign and to the vacancies thus created were assigned Lieutenant-Colonel G. W. Goethals of the Corps of Engineers, U.S.A., as chairman and chief engineer; two officers of the same corps, Major D. D. Gaillard and Major W. L. Sibert; Colonel W. C. Gorgas, M.D., Assistant-Surgeon-General, U.S.A.; Civil Engineer H. H. Rousseau, U.S.N.; and two civilians, Mr. J. C. S. Blackburn and Mr. Jackson Smith. All these appointments have been fraught with happy consequences, and none more so than that of Colonel Gorgas, whose promotion to the rank of Commissioner must be regarded not only as a well-merited personal compliment but also as a national recognition through the chief of the Executive of the immense services which are being rendered to the United States in the prosecution of its great undertaking by members of the medical profession. It has been largely due to the devotion with which his staff has seconded Colonel Gorgas's efforts and to the loyal support given by the Administration to the policy and representations of the health officers that it is already possible to describe the canal enterprise as realising the writer's confident belief of 1905—namely, that it would, "during construction, prove the most striking object-lesson ever offered of the benefits to be derived from a well-organised sanitary organisation associated with a great public work."

Before I review the achievements on which this assertion is based it may be desirable to refer, in brief and general terms, to the character of the undertaking as a whole. The canal now in course of construction differs in many essential details from that outlined by me in 1905 and that recommended for adoption in the reports of engineering experts to which reference has already been made. During the past two years and even within the last few months the plans have been subjected to such drastic revision and modifications that, until now, it has not been possible to estimate, with any measure of certainty, their complete scope and approximate cost. As now arranged, the Atlantic terminal of the canal will be between breakwaters built across the entrance of Limon Bay, and thence ships will pass through a channel, 500 feet wide and 41 feet deep to the shore line, a distance of 4·55 miles, and to the locks at Gatun 2·6 miles inland. At Gatun there will be built duplicate flights of three locks, by which the summit level will be reached, and also a great dam and regulating works. The object of these latter is to form a great reservoir, or inland lake, some 170 square miles in area, giving open navigation in a broad waterway all the way from Gatun to Obispo, and into which the floods of the Chagres will be received, controlled and utilised for the service of the canal. The total length of the lake—the surface of which will be 85 feet above the mean level of the oceans—will be 30 miles, and for half this distance only a small amount of excavation will be required to provide a navigable channel 1000 feet wide at the bottom and 45 feet deep. Elsewhere, as the amount of excavation necessary to obtain the minimum depth of 45 feet increases, the width will be decreased to 800 feet for a distance of 3·86 miles, 500 feet for 3·73 miles, 300 feet for 1·55 miles, and, finally, to 200 feet for 4·7 miles through the deepest portion of the Culebra cutting. Then the channel will become 300 feet wide for 1·88 miles to the Pedro Miguel lock, where the summit level will end, and the first descent be made to the level of the Pacific. This will be finally reached by a flight of two locks at Miraflores, whence there will be a channel, eight miles in length and 500 feet wide, to deep water in the ocean. Thus the total length of the canal from ocean to ocean will be 49·72 miles, divided into four levels by three flights of six locks, the last being in duplicate in order to provide against any delay to shipping arising out of the from time to time inevitably necessary repairs and renewals.

From data gathered and surveys made during the first year or so of the American occupation of the Canal Zone it has been estimated that to complete a navigable highway between the oceans of the type outlined above there would be required 124,310,000 cubic yards of excavation. Of this quantity—the immensity of which may be gauged from the fact that one and a half cubic yards of rock or earth is a good load for a two-horse waggon—the American steam-shovels and dredges accounted for 9,795,000 cubic yards up to March 30th, 1907. So nearly perfect, however, was the organisation on that date that in the 12 months following there was added to the record of excavation no less than 22,000,000 cubic yards, of which quantity about half was removed from the Culebra cutting. The record of monthly excavation has also regularly been raised. The totals, for example, for August, September, and October last, the three wettest months of the year, were respectively 1,285,791, 1,517,412, and 1,868,729 cubic yards, as against for all three corresponding months of 1906 1,470,779 cubic yards. In February, 1908, the total excavation was 2,945,880 cubic yards, and in the following month no less than 3,480,270 cubic yards. Added significance is lent to these figures by the fact that under the old *régime* 1,000,000 cubic yards a month was looked upon as a record only to be reached under the most favourable conditions.

The performances of the Department of Excavation and Dredging during the year ended March 30th last are not only remarkable in themselves but also eminently suggestive of the near approach of the time when we may begin to talk confidently of the completion of the canal. If work could be continued at the same high pressure and "making the dirt fly" were the only or main consideration, five years hence might witness the solution of the great problem which has vexed civilised mankind since Balbao first gazed upon the Pacific. To complete the Panama Canal, however, there will be required huge locks and dams and other accessory structures, some of dimensions and types unparalleled in the history of modern engineering, and one at least of such daring character as to be vindicated only by success. Preparations are now on foot for the initial work of construction, and it is hoped that the latter may be continued *pari passu* with the removal of earth and rock so as to justify the apparently not over-sanguine expectation of the authorities on the isthmus that the canal will be practically completed, if not actually opened for traffic, in the early months of 1915.

When the Americans, on May 4th, 1904, took formal possession of the canal properties they found between 600 and 700 men employed on the works, the majority continuing in somewhat perfunctory fashion the excavation of the Culebra cutting and the remainder occupied as caretakers of the machinery and stores of the French company. In the following November the Canal Commission's employees on the isthmus numbered 3500; on June 30th, 1906, there were on the canal work 500 white Americans and Europeans and 13,625 West Indians, and on the Panama Railroad an additional force of 5475 men; on June 30th, 1907, the canal employees numbered 4317 whites and 14 606 West Indians and those of the railroad company 10,523; and at the end of January last the total force of the Canal Commission actually at work was 25,367 men and of the Panama Railroad 6557 men. On Feb. 29th last the white employees of the Commission numbered 5083 and of the Panama Railroad 1091, all accommodated,

together with 1275 women and 1067 children, in quarters provided by the Commission. There were also on the same date about 200 women and 200 children, relatives of white employees, residing in independent quarters in Colon and Panama.

Referring in June, 1905, to the health conditions then prevailing in the isthmus—improved certainly since the American occupation, but still far from satisfactory—I deprecated very strongly, first, any undue haste in introducing the vast army of immigrant labour required to complete the canal; and, secondly, the inclusion among these recruits of any considerable number of Asiatics (Chinese or Japanese), "the most susceptible of any people to yellow fever infection. It must now be evident," I added, "even to the most confirmed doubter, that yellow fever is still endemic on the isthmus, and that neither Colon nor Panama can be considered reasonably secure from a recurrence of dangerous outbreaks until each is provided with an ample and wholesome water-supply; for, pending such improvement, it is obviously impossible to prohibit the use of water-containers, the favourite breeding place of the stegomyia mosquito. Nor can it be hoped, until the long-promised waterworks and sewers are in operation, that there will be any sensible diminution in the general death-rate."

For purposes of comparison (always bearing in mind for later periods the increased population, largely of immigrant labour, with but little earlier experience of sanitary regulations) between the condition of things during the first months of American rule and figures to be hereafter quoted the following brief summary of statistics will repay attention. The death-rate per 1000 among the entire population of the Canal Zone, Panama, and Colon, during the year ended Oct. 31st, 1905, was 53·78, the records ranging from about 40 in the earlier months to 66·40 in October. During the same period the rate of mortality among employees of the Canal Commission averaged 24·30 per 1000, the minimum return of any one month being 14 and the maximum, that for July, 46·11. The total record of cases of yellow fever and deaths from July 1st, 1904, to Oct. 31st, 1905, was 241 and 80 respectively, the maximum figures of 62 cases and 19 deaths being those of June. Other deaths by disease throughout the zone during the 15 months ended August 31st, 1905, were: malarial fever, 86; typhoid fever, 10; pernicious fever, 22; dysentery, 46; beri-beri, 36: tuberculosis of the lungs, 54; and pneumonia, 49.

Since the period with which these figures deal the isthmus has been the scene of many remarkable changes; indeed, it may without exaggeration be said that not only the face but also the character of the country have been altered. In my earlier contributions, it may be remembered, I referred at length to the physiological effects of its high temperature and debilitating humidity, accentuated by the noisome exhalations from decomposing organic matter, upon not only people accustomed to a temperate climate but also upon the native population. It seemed then almost ridiculous to anticipate that these effects could be sensibly modified, that life in the zone could be made endurable for the foreigner, or that the native could be awakened from his traditional sloth and disregard of the first elements of the laws of hygiene. Yet in three short years all this has happened. Panama and Colon, from hot-beds of disease have been transformed into practically new cities, not only by the provision of complete waterworks and sewerage systems, an efficient system of quarantine, the reconstruction or widening of many thoroughfares, and the paving of every street with stone or brick, but also by the now willing coöperation of their people in furthering the designs of the masterful American. The older hospitals have been enlarged and modernised, and wherever required new ones have been erected and properly equipped. At every important point along the canal line water and sewer systems have been installed, and nothing has been left undone to impress both native and immigrant employee with a sense of the dominant Power's appreciation of the value of life and health. The arrangements for the housing and feeding of the army of workers, white and coloured, on the canal and railroad leave little to be desired, and—a matter too often neglected in enterprises involving the employment of a large labour force—every possible encouragement is given by the Commission to the promotion of healthy social life.

The first result of all this care to which attention should be directed is the fact that for two years there has been no case of yellow fever on the isthmus, the last case having occurred in Colon in May, 1906. Yet yellow fever continues to be present in all the countries around the zone with which the latter has commercial relations. Bubonic plague is also prevalent on the Pacific coast, both north and south of the isthmus, but no case has occurred in the zone since 1905. Here we have abundant proof of the virtues of quarantine and a fairly substantial assurance that, thanks to pure water and to the vigilance of the sanitary corps, yellow fever has been practically stamped out in Panama and Colon. Even more interesting, however, is the record in respect of malaria. Of the deaths in 1907 among the workers on the canal line only 4·57 per 1000 can be attributed to diseases ordinarily known as tropical, among which, of course, is included malaria in its various forms. There were admitted to the hospitals last year, when the labour force averaged over 39,000, 16,753 cases of malaria, as compared with 21,739 cases in 1906, when the average force was but 26,000, indicating that in one year malaria had been reduced just 50 per cent. It is also worthy of note, as showing a greatly increased resisting power among the blacks, that whereas in 1906 the death-rate from malaria was approximately among the whites 2 per 1000 and among the blacks 8 per 1000, the same rates in 1907 were respectively 3 and 4 per 1000.

Other interesting data, all evidencing improved health conditions, resulting from more perfect sanitary and hygienic organisation, will be found in the following table:—

	1907.	1906.
Average number of employees of all grades (Canal Commission and Panama Railroad)	39,343	—
Deaths	1,132	—
Annual death-rate per 1000	28·77	41·24
Average number of white employees	10,709	—
Deaths	179	—
Annual death-rate per 1000	16·71	16·27
Average number of American white employee	4,300	—
Deaths	42	—
Annual death-rate per 1000	9·76	—
Deaths from disease	29	—
Death-rate from disease per 1000	6·74	—
Average number of negro employees	28,634	—
Deaths	953	—
Annual death-rate per 1000	33·28	49·01
Women and children in Commission quarters	1,387	—
Deaths	9	—
Death-rate per 1000	6·73	—
Average number of sick employees per day	987	—
Rate per 1000	25	—
Deaths from dysentery	48	69
Deaths from malaria	154	233
Deaths from pneumonia	328	421
General population of the Canal Zone, including Panama and Colon	102,000	66,000
Annual death-rate per 1000	33·63	49·1
Deaths from malaria	568	712
Deaths from dysentery	116	190
Deaths from pneumonia	581	720
Deaths from beri-beri	53	68

The records of the first three months of the current year are even more satisfactory and indicate a marked improvement as compared with the corresponding periods of 1907. Indeed, they provide the most favourable reports which the Health Department has been able to make. The death-rates for the whole population of the Canal Zone are especially noteworthy and compare favourably with those of many European and American cities, while the statistics having relation to the canal and railroad labour force indicate that the mortality among the latter is less than one-third what it was two years ago.

Referring particularly to the figures for March, it will be seen that the death-rate among employees was only about one-fourth what it was a year ago, the improvement (10·80, against 48·50 per 1000) being especially marked in the case of the negro workers. Taking special diseases and comparing the same months, the statistics are no less satisfactory. For example, in March of this year the deaths from malarial fever were nine, from pneumonia five, from tuberculosis three, and from typhoid fever one, as against, in March, 1907, 16, 53, 12, and nine respectively. This year there were admitted to the hospitals among the employees 533 malaria cases as against 1576, and the general sick-rate fell from 22·97 to 18·23 per 1000. It is also noteworthy that, although the weather conditions this year have been abnormally favourable to the development of

anopheles the average weekly malarial sick-rate in the Canal Zone has been less than one-third of that during the three months ended March 31st, 1907. Records show that there

	1908.			1907.		
	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
Number of employees of all grades	43,390	44,039	43,276	31,851	36,304	36,387
Deaths	46	47	45	68	93	122
Annual death-rate per 1000	12·72	12·80	12·47	25·62	30·74	40·23
Number of white employees	11,496	11,789	—	8,303	8,504	—
Deaths	11	7	—	9	10	—
Annual death-rate per 1000	11·48	7·12	—	13·01	14·11	—
Number of black employees	31,894	32,250	31,102	23,548	27,800	27,214
Deaths	35	40	28	59	83	110
Annual death-rate per 1000	13·16	14·88	10·80	30·06	35·83	48·50
Population of city of Panama	35,668	—	—	30,489	—	—
Deaths	112	—	81	105	—	—
Annual death-rate per 1000	37·68	—	—	41·93	—	—
Population of Colon	15,273	—	—	13,596	—	—
Deaths	38	—	26	53	—	—
Annual death-rate per 1000	29·85	—	—	46·78	—	—
Population of Canal Zone (outside cities)	61,121	—	—	45,089	—	—
Deaths	99	—	—	103	—	—
Annual death-rate per 1000	19·43	—	—	27·41	—	—
Total population of Canal Zone	112,062	113,269	114,920	89,174	94,494	95,421
Deaths	249	202	198	261	278	257
Annual death-rate 1000	24·66	21·40	20·67	35·12	36·07	32·32

is usually less malaria in May than in any other month of the year, yet the malarial rate for March last was about one-half that of the preceding May.

When Colonel Gorgas in 1904 entered upon his duties as head of the Health Department he fully recognised the importance and difficulties of the task set before him. Yet at the same time he quite frankly acknowledged that the political conditions ruling in the Canal Zone and the quite exceptional powers secured to the United States authorities for putting into force far-reaching sanitary rules and regulations could not fail to be most valuable auxiliaries to himself and his medical coadjutors. Among the latter, also, he found many men who, like himself, had had large experience of tropical people, diseases, and sanitation; and he well knew that, whatever efforts might be made to thwart his endeavours or impugn his methods, there would be no inclination on the part of those highest in authority to dispute his judgment. Reviewing these advantages, he very candidly confessed that the service of which he was the head "ought to be able to get up a model sanitary department." He set out to create this and, if success be measured by results, has most assuredly achieved his purpose.

Therefore, while claiming for the medical and sanitary staffs on the isthmus a maximum measure of credit for cleansing the country and thereby maintaining in the highest state of efficiency the army of canal and railroad workers, I regard it as a bare act of justice to record my conviction that without loyal support from headquarters much of the success would have been impossible. President Roosevelt has, at every stage of the enterprise, reiterated the sentiments expressed in his letter to the Secretary of War on May 9th, 1904, and Mr. Taft, as administrative head of the canal, has never faltered in his allegiance to them. As recently as Jan. 16th last Mr. Taft attended a meeting of the Senate Committee on Inter-Oceanic Canals, and in reply to some heckling on the subject of the cost of sanitation declared that the Government had in this matter adopted and followed a fixed policy—that of acting on the advice of the Isthmian medical staff. "The Government did not care," he said, "to assume the responsibility of acting contrary to the views of the doctors." "Moreover," he added, "Dr. Gorgas has proved so uniformly successful that we have felt fully justified in taking his advice in such matters. ..... The Spanish war has taught us and all the world how to live in the tropics."

In the lap of the gods rests the future of the Panama Canal enterprise. Whether it prove the great engineering triumph and commercial highway to which many of us look forward with confidence time alone will show; but of one credit history can never rob the United States. Among much good and evil it must record that it was under American administration that the knowledge and resources of modern science were applied to the hygienic redemption of the once noisome isthmus. Such fruits of labour in this direction have already been gathered that they promise to rival as a worthy monument of American achievement even the canal itself.

THE DIFFICULTIES UNDER THE MIDWIVES ACT.

IF the full benefit is to be derived from the Midwives Act when it comes into plenary force in 1910 the various associations for the supply of midwifery nurses will have to be prepared with some definite scheme to place before the Privy Council and the Local Government Board, the two authorities which are responsible for carrying out the provisions of the Act. Until a scheme satisfactory to all concerned is definitely adopted it cannot be expected that either the Government or the public will do much towards supplying the funds which will be needed. Real efforts are being made to overcome the difficulties which hitherto have threatened to stand in the way of carrying out the full powers which the Act admits, and it is possible that cöoperation between the different workers may result in some satisfactory proposals.

At a meeting of the Cottage Benefit Nursing Association held at Denison House, Vauxhall Bridge-road, London, on May 20th, under the presidency of Lord Ancaster, Mrs. Charles Hobhouse, referring to what was likely to take place when the Midwives Act came into full force in 1910, said she thought it was important that all voluntary associations should unite and ask the Government for one particular line of policy. With this object it was proposed to hold in July a meeting in London of the different associations throughout the country. Miss B. M. Broadwood, honorary secretary and director of the Cottage Benefit Nursing Association, said that in starting the association she was advised of the undesirability of introducing certificated midwives into the country who might be tempted to take the place of medical men. On the other hand, it was clear that there were large districts where medical men made no attempt to practise midwifery among the very poor. In such districts there could be no objection to midwives being employed. She suggested that branches of the Cottage Benefit Nursing Association should adopt the distinct rule that a midwife should only be supplied to a labourer earning not more than 16*s.* a week and that a charge of 15*s.* 6*d.* should be made to include two weeks of service after the child was born. The service of a medical man should be retained in every case at a fee of 5*s.* 6*d.* prepaid by a branch of the association. If it were necessary that the medical man should be called in by the midwife a further fee of 15*s.* 6*d.* should be paid. She added that there was a great danger in turning loose upon the community women with the qualification of midwife who were not absolutely going to practise in some definite post. She thought that it would be useful if medical men would send their opinions on these subjects to the office of the Cottage Benefit Nursing Association.

Another sign of the prevailing desire that the provisions of the Act shall be utilised to the fullest advantage is a letter which has been sent to the chairmen and clerks of county councils signed by Lord Goschen, chairman of council, Queen Victoria's Jubilee Institute of Nurses, 120, Victoria-street, London, S.W.; Mrs. Agnes Mabel Bruce, chairman of executive committee, Association for Promoting the Training and Supply of Midwives, Dacre House, Dean

Farrar-street, London, S.W.; Mrs. Josephine Heywood Johnstone, chairman of executive committee, Rural Midwives' Association, 47, Victoria-street, London, S.W.; Miss Alice Gregory, honorary secretary of the Home for Mothers and Babies, Wood-street, Woolwich; and Miss J. Wilson, president of the Midwives' Institute, 12, Buckingham-street, London, W.C. As will be seen by the document which follows the representatives of the different bodies unite in thinking that a local rate is the obvious way in which the expenses of providing midwives in accordance with the Act can be met:—

We are aware that in many parts of the country grants are made for training local women, and that admirable voluntary organisations are at work; but so far no official or concerted action has been taken to insure that midwives will be within the reach of mothers in remote and sparsely populated districts where no voluntary organisation exists, where the number of births cannot afford a maintenance to a midwife, and which suffer from the further disadvantage of being far from medical aid. There is no doubt from information in our possession that in many areas the year 1910 will bring great difficulty unless prompt action is taken. In view of the vital importance of midwives to the greater number of mothers of the working class, and of the responsibility, as local supervising authority, already placed by the Act upon county councils, we venture to ask whether steps could be taken to obtain Parliamentary power to incur expenditure, when necessary, to insure a due provision of midwives in each county in coöperation with, or supplementary to, existing nursing and other associations. In making this suggestion we are fully aware (1) of the danger of pauperising the poorer classes by the provision of assistance for which they ought to be responsible; (2) that there exists already a very large amount of voluntary effort and organisation which should be encouraged to the utmost. The fact remains, however, that such organisation is by no means universal; and many rural districts are and will be entirely unprovided with trained women unless there is a central body in each county with power to act in case of necessity. As the local authority appointed by the Act, we respectfully, therefore, urge upon your council the consideration of the questions we have raised, and of whether such expenditure should fall upon the local rate, or be in the form of an Exchequer grant, made on need shown by the council for such assistance. Such a grant could be applied for annually as occasion might demand, seeing that the necessity would, in many instances, be temporary, pending, for example, the working up of a practice of a midwife, or by the formation of a voluntary local organisation. We would point out that in many European countries this difficulty of remote districts is met very frequently by the payment to the midwife of a minimum wage by the State or by local authorities.

The letter does not take into account the difficulty caused by the midwife being obliged to call in medical men in certain circumstances, while there is no provision for the payment of medical fees. It seems to us that a conference of all interested in the subject would find excellent material for debate.

INTERNATIONAL CONGRESS ON TUBERCULOSIS AT WASHINGTON.

SEPT. 21ST TO OCT. 12TH, 1908.

WE have received the following complete list of the executive committee for Great Britain and Ireland in connexion with the Washington meeting:—Chairman: Sir William Selby Church, Bart., K.C.B., ex-President of the Royal College of Physicians of London. Vice-Chairman: William Osler, M.D., F.R.S., Regius professor of medicine in the University of Oxford. Honorary Treasurer: Theodore Dyke Acland, M.D., F.R.C.P., physician to St. Thomas's Hospital, consulting physician to Brompton Hospital for Consumption. England:—Sir Thomas Clifford Allbutt, K.C.B., Regius professor of physic in the University of Cambridge; German Sims Woodhead, M.D., F.R.S. Edin., professor of pathology in the University of Cambridge; Sir Felix Semon, K.C.V.O., M.D., F.R.C.P., physician extraordinary to His Majesty the King; H. Timbrell Bulstrode, M.D., medical inspector to the Local Government Board; W. Watson Cheyne, C.B., F.R.C.S., F.R.S., professor of clinical surgery, King's College; J. Kingston Fowler, M.D., F.R.C.P., visiting physician to King Edward VII. Sanatorium, consulting physician to Brompton Hospital for Consumption; Charles H. Garland, chairman of the National Association for the Provision of Sanatoria for Workers suffering from Tuberculosis; G. A. Heron, M.D., F.R.C.P., senior physician to the City of London Hospital for Diseases of the Chest; James Kerr, M.D., medical officer Education Office, London County Council; Percy Kidd, M.D., F.R.C.P., visiting physician to King Edward VII. Sanatorium, consulting physician to Brompton Hospital for Consumption; Arthur Latham, M.D., F.R.C.P., physician to St. George's Hospital, senior assistant physician to Brompton Hospital for Consumption; Arthur Newsholme, M.D., F.R.C.P., chief medical officer to the Local Government Board; Joseph John Perkins, M.B., F.R.C.P., physician to Brompton Hospital for Consumption, physician to outpatients, St. Thomas's Hospital (honorary secretary); J. Edward Squire, C.B., M.D., senior physician to Mount Vernon Hospital for Consumption; A. William West, chairman of St. George's Hospital; C. Theodore Williams, M.V.O., M.D., F.R.C.P., visiting physician to King Edward VII. Sanatorium, consulting physician to Brompton Hospital; Sir Isambard Owen, M.D., F.R.C.P., Vice-Chancellor of the University of Wales, Principal of Armstrong College; Sheridan Delépine, M.B., professor of pathology and bacteriology of Victoria University; I. Walker Hall, M.D., professor of pathology, University College, Bristol; E. W. Hope, M.D., medical officer of health of the city and port of Liverpool; Nathan Raw, M.D., F.R.C.S., F.R.S. Edin., member of the International Committee for the Prevention of Consumption; John Robertson, M.D., medical officer of health of the city of Birmingham; and John C. Thresh, M.D., medical officer of health to the Essex County Council. Wales:—William Williams, M.D., medical officer of health of the county of Glamorgan. Scotland:—The Rt. Hon. Sir Herbert Maxwell, Bart., F.R.S., chairman of council of the National Association for the Prevention of Consumption; Matthew Hay, M.D., medical officer of health of the burgh of Aberdeen, professor of forensic medicine and public health in the University of Aberdeen; J. Patten MacDougall, C.B., Vice-President of the Local Government Board for Scotland; Leslie Mackenzie, M.D., medical member of the Local Government Board for Scotland; D. J. Mackintosh, M.V.O., M.B., C.M., F.R.S. Edin., medical superintendent of the Western Infirmary, Glasgow; R. W. Philip, M.D., F.R.C.P., F.R.S. Edin., physician to the Royal Infirmary and Royal Victoria Hospital for Consumption, Edinburgh; Ralph Stockman, M.D., F.R.S. Edin., professor of materia medica and therapeutics in the University of Glasgow; and Charles Templeman, M.D., medical officer of health of Dundee. Ireland:—Her Excellency the Countess of Aberdeen (President); Sir John Byers, M.D., professor of midwifery, Queen's College, Belfast; Sir Robert Matheson, LL.D., Registrar-General for Ireland; Sir John William Moore, M.D., F.R.C.P.I., professor of medicine at the Royal College of Surgeons in Ireland; Sir William J. Thompson, M.D., F.R.C.P.I., physician in ordinary to the Lord Lieutenant of Ireland; A. E Boyd, M.B., D.P.H., honorary secretary of the Dublin branch of the National Association for the Prevention of Consumption; A. E. Mettam, B.Sc., M.R.C.V.S., M.R.I.A., Principal of the Royal Veterinary College of Ireland; E. J. McWeeney, M.D., D.P.H., bacteriologist to the Local Government Board for Ireland, professor of pathology and bacteriology to the Catholic University, Dublin; T. J. Stafford, C.B., F.R.C.S.I., medical commissioner to the Local Government Board for Ireland; and P. J. O'Sullivan, M.D., professor of medical jurisprudence, Queen's College, Cork.

Our own country will also be officially represented in accordance with the invitation of the United States Government, and delegates and representatives will attend in large numbers from most, if not all, civilised countries. It is especially to be desired that Great Britain and Ireland should be worthily represented, partly because the Congress is being held in a country so near akin to our own and partly because of the foremost position among the great nations which we have always taken in sanitary advance and the diminution of tuberculosis. In addition to sending representatives it is hoped, therefore, that the various public bodies will contribute descriptive and statistical accounts (including charts, models, &c.) of their work in dealing with tuberculosis. In this connexion it should be added that the Congress will include a museum, in which such charts, models, &c., will find a place. Dr. J. J. Perkins, honorary secretary of the executive committee for Great Britain and Ireland, will be pleased to give further information to all who desire it.

The members of the Congress are of two classes: Active members, who pay a fee of 5 dollars and who receive, besides the ordinary privileges of membership, the full set of published transactions without extra charge; and associate members, who pay a fee of 2 dollars. Associate members do not receive the published transactions or vote in the Congress, but they receive the official badge, the printed matter distributed during the Congress and at the exhibition, and share in the entertainments, attend the meetings, clinics, demonstrations, &c., and have the benefit of special transportation and hotel rates. An itinerary of special excursions for members is being prepared.

The subscriptions should be forwarded, payable to Mr.

Henry Phipps, treasurer of the International Congress on Tuberculosis, to Dr. John S. Fulton, secretary-general, 714, Colorado Building, Washington, D.C., U.S.A.

MEDICINE AND THE LAW.

The Problem of Expert Testimony.

AT a meeting of medical men in Boston, U.S.A., recently the following motion was carried:—

That this committee recommend to the various district societies of the State a plan by which physicians, when called to make examinations for the purpose of testifying in court, shall make that examination upon the basis of a professional consultation.

Such a plan has been adopted by Dr. F. W. Anthony of Massachusetts for several years with great success; it has, in practice, been approved both by bench and by bar. Those who favour original legislation to deal with the abuses of expert evidence allege, however, that one cannot deal with "shysters" upon this footing, or, possibly, it may be urged upon any other footing short of discrediting them; that lawyers will not forego the possibility of adducing biased testimony, unless, indeed, they are compelled so to do, as by the application of the "Anthony plan"; the last objection is that certain professional experts will not willingly fall in with the suggestion. In answer to the last objection it may be affirmed that any expert witness who declined to consult with colleagues in this sense prior to the forensic examination would have difficulty in persuading a jury of his *bona fides*. In the United States objection has been raised, only to be overruled, that such an admission cannot be extracted from an expert witness under examination. If the question has been propounded in the presence of the person examined, it is admitted as a part of what was said and done in that presence, and even if it is made to the physician himself it will be admitted as a question bearing upon his credibility and bias. Dr. Anthony claims that his plan deprives "the ambulance chaser" of his chief reliance, it adds to the self-respect of all physicians who testify in court, and chiefly it is the first step to the elevation of expert testimony, for the plan is as applicable in other lines as in that of medical testimony.

The London Parks as Sleeping Places.

Apparently there is a regulation for the benefit of those frequenting the London public parks under which authority is given to those in charge of them to prevent idle and disorderly persons from lying about on the grass and from occupying the seats. Relying upon this regulation a park constable on duty on Primrose Hill recently tried to induce a man, described as a labourer, who was lying on the grass, to move on, and was saluted by him with a volley of bad language in reply. The man was arrested and brought before Mr. Paul Taylor at Marylebone police-court, but apparently the learned magistrate was not in sympathy with the regulation or with the park constable's manner of enforcing it, although the defendant was described by the constable as a perfect pest to the park, continually lying about in it. Mr. Taylor was of opinion that lying about in the park did not prove him to be an idle and a disorderly person and suggested as a parallel that he himself might be arrested if he chose to rest on the grass in Hyde Park, where, as he said, no doubt with truth, many people habitually lie. He was of opinion that proof of uncleanliness was necessary and he dismissed the charge. We are not altogether in agreement with Mr. Taylor who suggested that there might be a danger lest the police should arrest or bring a criminal charge against respectable poor people going to the parks to enjoy the fresh air. The respectable poor, and, indeed, respectable people who are not to be classed as poor, together with their children, find their healthy enjoyment of the open and grassy spaces provided for their recreation and pleasure curtailed and interfered with by the presence of loafers and idlers of both sexes sprawling on the grass. These are in some cases filthy and verminous but not in all. Many of them are idlers who contrive to live well and to keep themselves a little above the condition to which rags are appropriate. Their wives work hard to support them or in other ways they pick up as much money as they require without any exertion on their own part. The police can be trusted to exercise discretion and to distinguish between disreputable loafers and citizens of the humbler class. The parks are not maintained as sleeping places for those who in summer make use of them in order to save the expense of beds in common lodging-houses and Salvation Army shelters.

Hypnotism as an Excuse for Crime.

To judge from the reports of French criminal trials which appear in the daily papers from time to time, accused persons in France are ready to put forward defences which are never heard of in this country. In a case reported on Monday last, a young man charged in the first instance with the murder of two persons admitted the fact but declared that at the time he was under the hypnotic influence of a certain medical man who often mesmerised him. "I had fallen asleep," he said, "when the spell came upon me. I fought against it but was compelled against my will to go to the Prince's house and strike at the Princess and her nephew." The medical man in question denies that he had exercised any influence in the matter. We do not know whether this defence is to be solemnly put forward in a court of justice; we can only say that it would meet with but short shrift before a judge and jury in this country. As English law now stands we imagine that a man might as well plead drunkenness as an excuse for his misdeeds as allege that he was acting under the hypnotic influence of a third party. The defence of insanity would be out of the question. It has long been the law that to establish a defence on the ground of insanity it must be clearly proved that at the time of the committing of the act the party accused was labouring under such a defect of reason from disease of the mind as not to know the nature and quality of the act which he was doing, or, if he did know it, that he did not know he was doing what was wrong. The accused has himself done his best to place his case outside this category by saying that he fought against the evil influence brought to bear upon him.

Assaults on Officials Discharging their Duties.

In two cases heard on the same day, the one at the Tower Bridge police-court and the other at the Thames police-court, serious assaults were proved to have been committed upon officials employed to enforce the law. In the first a perfumer named Albert Lowen had attacked a factory inspector named Davis who had called at the defendant's premises in Westminster Bridge-road with reference to his failure to put up an abstract as required by the Factory Acts. The defendant asked for proof of the inspector's authority and was shown it, but nevertheless attacked him savagely and threw him violently into the street, inflicting upon him injuries which delayed the hearing of the charge from March 12th until May 30th. The defendant's excuse was that he did not see what was on the parchment, and thought that Mr. Davis was an impostor, and witnesses on behalf of the defendant alleged that Mr. Davis had abused the defendant and behaved in an unjustifiable manner. Mr. Rose appears to have disbelieved these allegations, for he described the assault as an outrageous and aggravated one, inflicting a fine of £5 with the alternative of one month's imprisonment. In the other case referred to five persons—Aaron Selway, Harris and Annie Lupinsky, Esther Cheleboloff, and Ada Matznow were charged with harbouring smuggled saccharin and were ordered to pay fines ranging from £70 to £3, with alternatives of varying terms of imprisonment for that offence. It was shown, however, by the evidence that when the seizure of the saccharin took place and while a large quantity of it was being thrown out of window by some of the defendants Mr. J. H. Davies, a preventive inspector, was violently assaulted, and Mr. A. W. Cope, a supervisor who accompanied him, was threatened with a knife. In the circumstances described the fines inflicted in both cases seem scarcely to constitute sufficiently heavy punishment to act as a deterrent against similar assaults. Factory inspectors, sanitary inspectors, medical officers of health, and many others, besides officers connected with the collection of revenue of various kinds, are often compelled to visit the houses of strangers and to perform tasks which render them highly obnoxious to persons of a very rough class. They are not selected and trained with a view to their defending themselves against violence like police constables and often act without police assistance and they are entitled to a full measure of protection from the law. The foreigners, moreover, who are so frequently offenders against the laws which have to be enforced by the officials in question are usually quite well aware that they are breaking the law and know perfectly well from experience in their own countries that they ought not to

resist lawfully constituted authority with violence. If those who represent the law, on the other hand, transgress their conduct can be complained of in the proper manner.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ELECTION TO THE COUNCIL.

As we have already announced, on Thursday, July 2nd, the Fellows of the College will elect four Fellows to fill the vacancies on the Council. Every year three members of Council retire and those due to retire this year are Mr. J. Ward Cousins, Mr. A. Pearce Gould, and Mr. W. Harrison Cripps. Mr. F. Howard Marsh has resigned two years before the termination of his period of office and therefore there will be four vacancies to be filled. Mr. Ward Cousins was first elected in 1895 as a substitute member, again as a substitute member in 1897, and again in 1900. Mr. Pearce Gould was elected in 1900 and is a candidate for re-election. Mr. Harrison Cripps was elected in 1905 as a substitute member, and he also will no doubt apply for re-appointment. Other candidates are Mr. W. Arbuthnot Lane, Mr. J. Lynn Thomas, Mr. George Eastes, and Mr. William Frederick Haslam. It is probable that Mr. C. B. Lockwood will also be a candidate. At the forthcoming election the successful candidate who receives the smallest number of votes will serve as substitute member for Mr. Howard Marsh and will retire in 1910. The following table gives the dates at which the several members of the Council will retire.

In 1909.—Mr. W. Watson Cheyne, first elected 1897.
Mr. A. W. Mayo Robson, first elected 1893.
Mr. R. Clement Lucas.
In 1910.—Mr. J. H. Morgan.
Mr. H. H. Clutton.
In 1911.—Mr. H. T. Butlin, first elected 1895.
Mr. Clinton C. Dent.
Mr. G. H. Makins.
In 1912.—Mr. F. S. Eve, first elected 1904.
Mr. A. A. Bowlby.
Mr. G. Barling.
In 1913.—Mr. Rickman J. Godlee, first elected 1897.
Mr. Edmund Owen, first elected 1897.
Mr. C. H. Golding-Bird.
In 1914.—Mr. H. Morris (President), first elected 1893.
Mr. F. Richardson Cross, first elected 1898.
Mr. G. A. Wright.
In 1915.—Mr. C. W. Mansell Moullin, first elected 1902.
Mr. W. Bruce Clarke.
Mr. Charters J. Symonds.

BRITISH MEDICAL BENEVOLENT FUND.

At the May meeting of the committee 22 cases were considered and grants amounting to £156 were made to 17 of the applicants. A vacant annuity was filled by the election of an approved candidate. Appended is an abstract of the cases relieved:—

Widow, aged 64 years, of L.F.P.S. Glasg. Since husband's death, after a long illness, about a year ago, applicant has endeavoured to support herself by letting lodgings. No children. Voted £5, with leave to apply again in six months if necessary.

Widow, aged 57 years, of L.F.P.S. Glasg. Left quite unprovided for at husband's death about 10 years ago. Nine children who do all that is possible. Relieved nine times, £125. Voted £5.

Daughter, aged 37 years, of late M.D. Glasg. Is a daily companion to an invalid lady, but earnings are insufficient for her own maintenance and a little help she is obliged to give her mother. Relieved four times, £22. Voted £5.

Daughter, aged 66 years, of late M.R.C.S. Has supported herself for many years but is now dependent on relations and is a candidate for the Epsom pension. Voted £5.

M.R.C.S., aged 67 years. Is incapacitated by hemiplegia and dependent on a son whose earnings are small. Voted £5.

M.R.C.S., L.S.A., aged 68 years. For some time past has been quite incapacitated by paralysis and heart disease. Eight children, of whom only three are entirely self-supporting. Has a small pension from a board of guardians but it is quite inadequate for unavoidable expenses. Relieved six times, £90. Voted £12.

Daughter, aged 76 years, of late M.R.C.S. Has a small annuity and hopes shortly to be elected to a U.K.B.A. pension, but requires a little help meantime. Relieved once, £12. Voted £5.

Daughter, aged 52 years, of late M.R.C.S., L.S.A. No income and regular work impossible owing to bad health. Relieved twice, £20. Voted £10.

Daughters, aged 47 and 45 years, of late M.R.C.S., L.R.C.P. No income; endeavour to support themselves by letting lodgings in the summer and by knitting in the winter. Relieved eight times, £87. Voted £12.

Daughter, aged 66 years, of late M.D. No income and only able to obtain occasional employment. Relieved ten times, £91. Voted £12.

Widow, aged 43 years, of L.R.C.P., L.R.C.S. Edin. Quite unprovided for at husband's death several years ago and is in extremely bad health. Is assisted by the Ladies' Working Guild. Children unable to help. Relieved 13 times, £148. Voted £12.

Daughter, aged 51 years, of late L.R.C.P. Edin. No income. Is a great sufferer from rheumatic gout and dependent for a home on two unmarried sisters who have to earn their own living. Relieved three times, £26. Voted £10.

Widow, aged 51 years, of L.R.C.P.I. No income and has not yet recovered from the effects of a very serious operation. Relieved once, £12. Voted £12.

Daughter, aged 51 years, of late M.D. Lond. Income £20 a year from the Home for Incurables. Has had a serious illness during the winter and in consequence lost a lodger and is in arrears with rent. Relieved nine times, £81. Voted £10.

Widow, aged 67 years, of M.D. Edin. Children unable to help and is dependent on this fund and a little assistance given locally. Relieved four times, £42. Voted £15.

Widow, aged 61 years, of L.R.C.P., L.R.C.S. Edin. Has a small pension from a City company, but it is insufficient for bare necessities and children are unable to help. Relieved once, £6. Voted £8.

Wife, aged 43 years, of L.R.C.P., L.R.C.S. Edin., who is confined in an asylum. No income; dependent on a sum collected locally and now nearly exhausted, and earns a few shillings a week by fancy work. Two children, aged 15 and 12 years. Relieved once, £15. Voted £15.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 5th, 1830.

NON-APPOINTMENT OF SURGEONS TO TRADING VESSELS.

To the Editor of THE LANCET.

SIR,—To me it has often been a subject of surprise, that among the many laws which are enacted by our legislature, none has ever compelled merchant-vessels of a certain tonnage, and having on board a certain number of men, to carry a surgeon. Such a defect in our maritime laws becomes still more singular, when we call to mind the high mercantile character of the British nation, and the consequent necessity for protecting the health and lives of those employed in it. That a medical man ought to be numbered amongst the crew of all large ships bound to distant parts, is what the public have a right to expect; it is what the seamen, their relatives, and their friends, have a right to demand; but that a south-seaman in particular, bound on a whaling voyage, should be allowed to sail from a British port without any medical officer on board, is a deep stain upon the humanity for which England has ever been renowned. It is true a still heavier blame, amounting to criminality, is attached to the South-sea ship-owners individually, but experience teaches us we are not to depend upon the generous and benevolent feelings which ought to actuate those whom the labour of many poor men enriches. Such feelings are too often absent. A close and lengthened application to a profitable business, frequently strips the heart of all that is noble, and renders it sensible to little but self-interest.

Whalers are generally from two to three years away from England, and no class of vessels, whether merchantmen or men-of-war, can, in time of peace, be exposed to one half the danger to which they are exposed. The crews are liable to every variety of malignant disease arising from vicissitude of climate; they are liable to innumerable accidents in the dangerous and frequently fatal employment of whaling; they are mostly in the habit of touching and refreshing at savage islands, where no medical attendance can be procured; they are, in fact, during these long, tedious, and hazardous voyages, separated from the civilized world, having but little communication with any, save with the semi-barbarous natives of the South-sea islands.

These, Sir, I think, are forcible arguments in favour of an act of parliament, obliging all vessels, but more especially whalers, whose complement of men consists of—say twenty and upwards, to carry a surgeon. This would not be imposing an unjust tax on *poor* merchants, as all who can fit out ships on whaling expeditions, must necessarily be considerable capitalists, and possess ample means of employing medical men. In short, humanity towards our sailors, the

prop and support of the British nation, loudly calls upon those who have it in their power, to enact such a law.

I am, Sir, your obedient servant,

Camberwell, May 26, 1830. G. E. LANGTON.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8915 births and 3917 deaths were registered during the week ending May 30th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 15·7 to 13·2 per 1000, further fell to 12·6 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these towns averaged only 14·6 per 1000, and in London during the same period the rate did not exceed 14·3. The lowest annual death-rates in the 76 towns during the week under notice were 4·5 in Hornsey, 5·6 in Willesden, 5·8 in East Ham, and 6·6 in Leyton and in Halifax; the rates in the other towns ranged upwards to 20·1 in Oldham, 20·3 in Burnley, 20·4 in Stockport, 20·9 in Merthyr Tydfil, and 21·5 in Wigan. The death-rate in London during the week did not exceed 11·7. The 3917 deaths in the 76 towns during the week showed a further decline of 180 from the numbers returned in the four preceding weeks, and included but 288 which were referred to the principal epidemic diseases, against numbers declining from 445 during the eight preceding weeks; of these 288 deaths, 75 resulted from whooping-cough, 72 from measles, 47 from diarrhœa, 39 from scarlet fever, 36 from diphtheria, and 19 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases last week were equal to an annual rate of 0·9 per 1000, which was considerably below the rate in any previous week of this year; the rate from these diseases in London did not exceed 0·7 per 1000. No death from any of these epidemic diseases was registered last week in Leicester, Willesden, Blackburn, Walthamstow, or in 14 other smaller towns; the annual death-rates from these diseases ranged upwards, however, to 2·5 in West Ham and in Burnley, 2·7 in Merthyr Tydfil, 3·0 in Middlesbrough, and 3·1 in Aston Manor. The fatal cases of whooping-cough in the 76 towns, which had been 121 and 114 in the two preceding weeks, further declined to 75 in the week under notice; this disease caused the highest death-rates, 1·5 in Burnley, 1·6 in Rotherham, and 2·7 in Merthyr Tydfil. The 72 deaths from measles also showed a considerable further decline from recent weekly numbers, but caused death-rates equal to 1·5 in Stockport and in Wallasey, 1·7 in West Ham, and 1·8 in Preston. The 47 deaths attributed to diarrhœa showed a slight increase, and were proportionally most numerous in St. Helens and Middlesbrough. The 39 fatal cases of scarlet fever showed a further small increase upon recent weekly numbers, and included 13 in London and its suburban districts, six in Liverpool, six in Manchester and Salford, and two in Leeds and in Reading. Of the 36 deaths from diphtheria, also showing an increase, 11 occurred in London and two in Bristol, in Portsmouth, in Aston Manor, in Derby, and in Gateshead. Two of the 19 deaths from "fever" were recorded in Newcastle-on-Tyne. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined from 2938 to 2802 in the four preceding weeks, had further fallen to 2753 on May 30th; 334 new cases were admitted to these hospitals during the week under notice, against 380 and 330 in the two preceding weeks. The deaths in London referred to pneumonia and to other diseases of the respiratory organs, which had steadily declined in the five preceding weeks from 301 to 194, further fell to 147 during the week under notice, and were 51 below the corrected average number in the corresponding week of the five years 1903–07. Only eight deaths were directly referred to influenza in London, showing a marked decline from recent weekly numbers. The causes of 34, or 0·9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were again duly certified in Leeds, Manchester and Salford, Bristol, West Ham, Bradford, and in 47 other smaller towns; five uncertified causes of death were, however, registered in Birmingham and King's Norton, three in St. Helens, and three in Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 15·3 and 15·4 per 1000 in the two preceding weeks, further rose slightly to 15·5 in the week ending May 30th. During the first nine weeks of the current quarter the annual death-rate in these eight towns averaged 17·4 per 1000, and exceeded by no less than 2·8 the mean rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 12·3 and 12·7 in Aberdeen and Dundee to 17·8 in Perth and 17·9 in Leith. The 546 deaths in the eight towns (against 541 and 542 in the two preceding weeks) included 54 which were referred to the principal epidemic diseases, showing a slight increase upon the low numbers returned in the two preceding weeks; of these 54 deaths, 17 resulted from diarrhœa, 16 from measles, 13 from whooping-cough, five from diphtheria, two from "fever," and one from scarlet fever, but not one from small-pox. These 54 deaths were equal to an annual rate of 1·5 per 1000, the mean rate from the same diseases in the 76 English towns during the same week not exceeding 0·9. The 17 deaths attributed to diarrhœa in the Scotch towns exceeded the numbers in recent weeks and included eight in Glasgow and three in Dundee and in Aberdeen. The 16 fatal cases of measles also exceeded the number in the previous week; seven were returned in Glasgow, five in Edinburgh, and two both in Paisley and in Leith. Of the 13 deaths from whooping-cough, also showing an increase, eight occurred in Glasgow, two in Aberdeen, and two in Paisley. Of the five fatal cases of diphtheria, also exceeding the low numbers in recent weeks, three occurred in Glasgow and two in Leith. The two deaths from "fever," both certified as due to cerebro-spinal meningitis, were returned in Glasgow; the deaths from this disease in the eight towns were fewer than in any recent week. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 119, 79, and 77 in the three preceding weeks, rose to 85 in the week under notice, and exceeded by two the number returned in the corresponding week of last year. The causes of 16, or 3·0 per cent., of the deaths in these eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death in the same week was 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 19·0 and 22·2 per 1000 in the two preceding weeks, declined to 15·9 in the week ending May 30th, and was considerably lower than in any previous week of this year. During the first nine weeks of the current quarter the death-rate in Dublin averaged 21·9 per 1000; the mean rate during the same period did not exceed 14·3 in London and 15·9 in Edinburgh. The 120 deaths of Dublin residents registered during the week under notice showed a decline of 48 from the number returned in the previous week and included six which were referred to the principal epidemic diseases, against six and four in the two preceding weeks. These six deaths were equal to an annual rate of 0·8 per 1000, the rate during the week from the same diseases being 0·7 in London and 0·9 in Edinburgh. Of the six deaths from these epidemic diseases in Dublin, three resulted from diarrhœa, two from diphtheria, and one from measles, but not one from scarlet fever, whooping-cough, "fever," or small-pox. The 120 deaths from all causes in the city during the week under notice included 20 of infants under one year of age and 36 of persons aged upwards of 60 years; the deaths of elderly persons were considerably fewer than in any previous week of this year. Five inquest cases and four deaths from violence were registered, and 53, or 44·1 per cent., of the deaths occurred in public institutions. The causes of all but one of the deaths during the week were duly certified. The causes of all but one of the 1073 deaths in London were also duly certified, but more than 5 per cent. of the causes of death in Edinburgh were uncertified.

THE R.A.M.C. CAMP AT BULFORD.—The R.A.M.C. camp of instruction was formed at Bulford on June 1st, the officers and men being drawn from the outstations of the Southern Command. Ten officers and 182 non-commissioned officers and men are under canvas.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: J. Bradley to the *Ocean*, on recommissioning; G. H. Foott to the *Victorious*; A. M. Page to the *London*. Staff-Surgeons: T. W. Philip to the *Russell*, on recommissioning; J. W. W. Stanton to the *Illustrious*, on recommissioning; H. Spicer to the *Repulse*. Surgeons: F. Cock to the *Russell*, on recommissioning; M. T. Male to the *Mars*, on recommissioning; B. S. Robson to the *Spanker*, on completing; and D. H. Vickery to the *Illustrious*, on recommissioning.

ARMY MEDICAL SERVICE.

The transfer from the Supernumerary List of Colonel W. Babtie, V.C., C.M.G., bears date May 13th, 1908.

ROYAL ARMY MEDICAL CORPS.

Lieutenant James C. L. Hingston is confirmed in that rank.

Captain F. M. Parry, from the London District, has been appointed to the Eastern Command from August 1st. Captain L. V. Thurston, on return from leave, has been posted to Jubbulpore for duty.

"LORD ROBERTS'S BOYS."

The report by the executive committee to the council of the City of London Schoolboys' Shooting Club for 1906–07 is an interesting little pamphlet giving an account of the work done by the boys in camp and embellished with a reproduction of a photograph of the Astor Cup team at Bisley (1907) and a coloured picture of the headquarters hut for the "Lord Roberts's Boys" at Bisley, 1908. The report states that the 1907 season was a most successful one. Facilities have now been provided in the City of London for drill and rifle shooting for all schoolboys and each school possesses its school cadet corps. "All we now require," says the committee, "is permission from the Board of Education to draft instructors to school premises once or twice a week, at convenient times, for drill of a military type."

THE ALLOCATION OF OFFICERS' CABINS.

An important circular letter has been issued by the Admiralty relating to improved rules with regard to cabin accommodation for officers on board ships of war. In future a captain is to allow every officer to occupy a cabin allotted according to his rank, and special cabins will be given to medical officers amongst others, the selection being made with special reference to official duties.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF PULMONARY TUBERCULOSIS BY A POSTURAL METHOD,

ENCOURAGING DRAINAGE OF THE LUNG AND INDUCING ARTIFICIAL HYPERÆMIA OF THE APEX.

To the Editor of THE LANCET.

SIR,—The favourable account which Dr. A. T. Tucker Wise is able to give of the *prone posture* in the treatment of phthisis will not be a surprise to those who may have tried it in patients suffering from other affections as well as for themselves in health. Its advantages are cardiac as well as respiratory. The weight of the heart being completely removed from the diaphragm and from the roots of the lungs the posterior lobes, particularly at the base, are allowed great freedom of expansion, and this in itself eases the circulation through the heart. In phthisis great value must attach to this cardio pulmonary advantage, as I have found it a help in various conditions of lowered vitality. I first resorted to it some years ago for the treatment of rickets, but it was not until three years ago that I commenced the long-delayed construction of the "infant-rest" and of the "all fours exerciser,"[1] and subsequently of the "convalescent machine,"[2] which provides among many other uses the same facilities as the exerciser. These appliances, as stated in my paper on the "Empty Bronchus" Treatment by Posture in the Bronchiectasis of Children,[3] owing to their adaptability to a variety of purposes and of ages, are specially suitable for hospitals and institutions. Dr. Tucker Wise's prone couch has the advantage of greater simplicity and cheapness whilst answering the individual requirements of the case of phthisis.

The systematic employment of the *inclined prone posture* is, I believe, an entirely new departure in the treatment of pulmonary tuberculosis. Judging from Dr. Tucker Wise's experience it is likely to be a permanent addition to our therapeutical methods. My own previous use of that posture had been occasional only; and it was limited to an endeavour to empty the basic cavities of phthisis, and on the other hand to convey into the cavities at the apex injections introduced through the trachea, an attempt which has since then been much more efficiently made by Colin Campbell by means of his ingenious "revolving chair." At the same time, the *continuous drainage* of bronchiectatic cavities by the inclined prone posture was one of the special purposes for which the machines were devised and have been used. But Dr. Tucker Wise's method claims in addition to secure for the treatment of phthisis a *passive hyperæmia* of the apices. In that respect it is most up-to-date, as Bier's therapeutical method has now led to the invention of Kühn's "pulmonary suction-mask," the latest fruit of the suggestion contained in Rokitansky's original observation (1846) as to the comparative infrequency of tubercle in the congested lung of mitral disease.

The respiratory indications of the *pulmonary rest cure* are thoroughly fulfilled by Dr. Tucker Wise's prone couch which favours the function of the posterior lobes. I must own, however, that the *cardio-pulmonary exercise-cure with local rest for the apices* provided by the prone posture on the convalescent machine had been uppermost in my mind in connexion with the sanatorium purposes of the machine. It was in that manner that I began using it last year for phthisis at St. George's Hospital. The graduated exercise which it provides can be strictly limited at first to the lower limbs, as the patient wheels himself about by the action of the feet; and the exertion can be started at a very low minimum of effort, as in the prone posture the weight of the body is entirely carried by the machine. For those who share these views as to the treatment of pulmonary disease Dr. Tucker Wise's most practical appliance might easily be modified and mounted upon wheels so as to answer the purposes of exercise as well as those of rest.

I am, Sir, yours faithfully,

May 31st, 1908. WILLIAM EWART.

[1] Constructed by Mr. S. Turner of 16, Eccleston-street, London, S.W.

[2] Constructed by Messrs. J. Ward, 246, Tottenham Court-road, W.C.

[3] Medical Press and Circular, May 20th, 1908.

THE ADMINISTRATION OF VACCINES BY THE MOUTH.

To the Editor of THE LANCET.

SIR,—At the discussion on May 26th at the Royal Society of Medicine of Dr. A. Latham's paper on the Administration of Vaccines by the Mouth much was said of horse serum, and but little attention paid to the main question at issue—the absorption or non-absorption of tuberculin (and other vaccines) from the alimentary canal. May I crave space to bring forward a point which the meeting overlooked and time did not allow me to develop—namely, the utter impossibility of testing this method of vaccine administration on such a disease as phthisis. In this disease, as we all know, auto-inoculation is continually going on and the opsonic index is continually fluctuating, and in such unstable conditions the effect of a dose of tuberculin is really impossible to follow. I cannot persuade myself that Dr. Latham's opsonic charts prove anything at all.

On the other hand, the absorption or non-absorption of tuberculin given by the mouth can be readily decided once and for all if a case of *localised* tuberculosis is chosen, and it is curious that this test has not been already applied. Given a stationary opsonic index, the effect (or non-effect) of tuberculin per os is definite and certain. If it is absorbed a "tuberculin curve" will result; if it is not absorbed the opsonic index will remain as before. Till this test has been applied the value of tuberculin by the mouth in phthisis must remain an unknown

quantity and but little advance in our knowledge will be gained by its use. If the vaccines can be given by this method it will be a great point gained, though one cannot but fear that under the varying conditions of alimentary absorption accuracy of dosage will be impossible to attain. But, at any rate, let us decide first of all by the simple means at our disposal whether they are absorbed or not.

I am, Sir, yours faithfully,

Devonshire-street, W., May 27th, 1908. CLIVE RIVIERE.

CONVEYANCE OF THE INFECTION OF CHICKEN-POX BY A THIRD PERSON.

To the Editor of THE LANCET.

SIR,—The possibility that chicken-pox may be conveyed by a third person, who is not suffering from the disease, is shown by the following case. I was called in on March 12th last to see a single woman, aged 30 years, suffering from the effects of an attack of influenza, which she was said to have had about a month previously. On March 14th symptoms of jaundice presented themselves and she remained in bed, isolated from the rest of the family except for her parents. The following Monday, March 16th, acute toxæmic jaundice supervened and the patient was placed in charge of two trained nurses, her parents seeing her occasionally only. The following Saturday I saw a young girl living in the house, whom I found to be suffering from a mild attack of chicken-pox, contracted at a day school. The attack was a very mild one and I ordered frequent disinfectant baths, at the same time taking care to isolate as far as possible my other patient by cutting all communication with the sick room, except for the parents, to whom I gave directions accordingly. On April 8th the elder patient, who so far had been progressing favourably and was recovering from her original illness, became suddenly worse, being delirious, her temperature, which had been subnormal (97·2° F.), rising to 99·8° and her pulse to 130 and higher. She remained in this condition for 48 hours and on April 10th a dense chicken-pox rash appeared, covering her thickly from head to foot, many of the spots rapidly becoming pustular and then breaking down into large ulcers, some one-third of an inch across, and penetrating into the subcutaneous tissues. The patient's condition remained critical for another 48 hours and then slowly began to mend, becoming convalescent by the end of the month. No other case of chicken-pox occurred in the house.

The infection in this case was evidently conveyed by some person who did not have the disease, probably by the parents, neither of whom ever showed any trace of the disease, both having had it many years before. The two patients with chicken-pox had not been in contact since March 13th and the elder had not been outside her bedroom for four weeks previously to the rash appearing in her case.

I am, Sir, yours faithfully,

May 30th, 1908. ERNEST F. TRAVERS, M.D. Lond.

THE SPIROGRAPH.

To the Editor of THE LANCET.

SIR,—Two weeks ago a criticism of my book on "Diagnosis in Diseases of the Throat, Nose, and Ear" appeared in THE LANCET. In that criticism it is stated that the spirograph attributed to Wingrave was invented by Sandemann many years ago. Such is not the case. Sandemann employed a square of cardboard sprinkled over with powdered slate or similar material. It was a lamentable failure. Wingrave's device is described in my book. It is a perfect success. The first qualification for a critic, especially a critic attached to THE LANCET, is a sound knowledge of his subject. Otherwise criticism becomes presumption.

I am, Sir, yours faithfully,

Stratford-place, W., May 21st, 1908. DAN MCKENZIE.

To the Editor of THE LANCET.

SIR,—Thank you for allowing me to see the courteous strictures of Dr. McKenzie. I take the liberty of pointing out in reply that Sandmann's method was described in a paper read in Berlin in 1893, perhaps a little too early for Dr. McKenzie to know much about it; that "powdered slate" was not used; that Sandmann's method gave a *permanent* record; and that the temporary method advocated by Dr. McKenzie is precisely that first adopted by Sandmann. (The paper is published in the *Journal of Laryngology*, February, 1894.)—I am, Sir, yours faithfully,

May 27th, 1908. THE REVIEWER.

"THE OLDEST INSTITUTION FOR TREATING SICK CHILDREN."

To the Editor of THE LANCET.

SIR,—A copy of the *British Press* (price 7*d*.) for Monday, April 29th, 1816, has recently come into the possession of the board of governors. It contains a two-column report of the foundation meeting of the hospital held at the City of London Tavern on the previous Saturday, at which T.R.H. the Dukes of Kent and Sussex were present, with the Lord Mayor, the Sheriffs, and a numerous company of ladies and gentlemen. The two former were the first subscribers of £20 each and the latter £10 each. The institution thus created was named "The Royal Universal Infirmary for Children," and after several variations of name, and one change of site, but in unbroken succession, it is now known as the Royal Waterloo Hospital for Children and Women, and so has been continuously at work for more than 90 years.

I am, Sir, yours faithfully,

J. HOUSTON,

Organising Secretary of the Special Appeal Committee of the Royal Waterloo Hospital.

THE GRÆCO-ROMAN BRANCH OF THE EGYPT EXPLORATION FUND.

To the Editor of THE LANCET.

SIR,—Will you kindly permit me the haven of your correspondence column to advocate the claims of what is known as the "Græco-Roman Branch of the Egypt Exploration Fund." This fund is for the purpose of recovering ancient papyri from the sands of Egypt by means of excavations upon the sites of the old Greek and Roman cities there. And the number of fragments of classic medical works already discovered, including the priceless manuscript of the Hippocratic treatise, "The Iatrica of Menon," is quite considerable. The reports of municipal medical officers and particulars of taxes and imposts for medical purposes found from time to time are most interesting. Further medical manuscripts will almost certainly be procured, but the society is, unfortunately, inactive temporarily for want of funds. A subscription of 21*s*. or upwards entitles donors to the annual volume and will help this most deserving society.

I am, Sir, yours faithfully,

Bedford Park, W., May 26th, 1908. JOSEPH OFFORD.

P.S.—The Fund's address is 37, Great Russell-street, Bloomsbury, London, W.C.

THE FIRST INTERNATIONAL CONGRESS ON LARYNGOLOGY AND RHINOLOGY.

(FROM OUR VIENNA CORRESPONDENT.)

(Concluded from p. 1445.)

Diagnostic and Therapeutic Applications of the X Rays.

Professor BURGER (Amsterdam) read a paper on the Value of the X Rays in Rhino-Laryngology. He said that this method had many advantages in certain branches of medicine. It enabled the ossification of the bones to be studied; it showed the mechanism of singing, speaking, and deglutition; and it clearly displayed the position of foreign bodies in the œsophagus and the bronchi. It was not possible to obtain with the x rays the same good results as with direct œsophago-bronchoscopy, but the use of the x rays was much easier and did not require so much special experience. The rays had little value for the differential diagnosis of neoplasmata but the diagnosis of diseases of the accessory sinuses of the nose, especially when used in the sagittal direction, was much helped by them, for they enabled an opinion to be formed as to the condition of the maxillary, the sphenoidal, and the frontal sinuses. Instruments might be used in these sinuses under the guidance of the rays. Electric transillumination gave better results in disease of the maxillary antrum and the x rays in disease

of the frontal sinus. Enlargement of the sella turcica had been demonstrated with the rays in cases of acromegaly. Odontology owed much to them and diseases of the thorax were often elucidated by a good x ray photograph, especially if there were enlarged intrathoracic glands or an aneurysm causing compression of nerves or displacement of the heart or the trachea.

Professor KILLIAN (Freiburg) showed a series of fine X Ray Photographs in which the topography of the accessory sinuses could be studied at leisure. After explaining the method of taking these photographs he said that not only the size of a sinus but also its position, its relations to other parts of the head, and the condition of its mucous membrane could be learned from the photographs. The information obtainable in this way was especially valuable before the performance of an operation on the ethmoidal or frontal sinus. In taking those photographs Professor Killian always passed the rays in a sagittal direction so that both halves of the head were shown on the same plate. He used "soft" tubes and an exposure varying from one to three minutes.

Professor GRADENIGO (Turin) read a paper on the Therapeutic Value of the Rays and Radium in Diseases of the Upper Air Passages. In enumerating the advantages of this method of treatment he said that the resulting scars were very flat and little noticeable, while the treatment itself was not only painless but free from danger in experienced hands. The disadvantages were that little effect was produced in the depth of the tissues, that there was a possibility of the spread of malignant disease under a healthy looking scar, and that recurrence was frequent. Good results had been obtained in cases of lupus and epithelioma but not in sarcomata. Radium could be used in the interior of small cavities but in lupus of the mucous membranes of the nose and the mouth or larynx it was not so efficacious as in lupus of the skin.

Relations between the Nasal Sinuses and the Eye.

Professor KUHNT (Bonn) spoke on the Correlation between the Anterior Accessory Nasal Sinus and the Eye and drew attention to the existence of a sympathetic connexion between inflammations of the ethmoidal labyrinth and diseases of the lacrymal apparatus, such as dacryocystitis or conjunctivitis; panopththalmitis had also been observed as a sequel of acute empyema of the frontal sinus. It was necessary to be cautious in tracing a connexion between nasal conditions and symptoms dependent on diseases of the bulbar nerves, such as muscular paralysis or optic neuritis, because the pathological anatomy of those cases was not quite clear.

In the discussion following the paper Dr. RÉTHI (Vienna) said that in two cases under his care impending blindness was averted by clearing out the ethmoidal cells, after which rapid recovery of sight took place. Several reports from Professor Chiari's clinic also showed that recovery of sight had undoubtedly followed intranasal operations.

Malignant Disease of the Larynx.

Professor MOURE (Bordeaux) read a paper on the Operative Treatment of Malignant Disease of the Larynx. He advised the performance of a radical operation with simultaneous tracheotomy and was in favour of uniting the tracheal and laryngeal incisions into one large wound. In order to prevent pressure on the tracheal rings he had had a tracheal tube constructed in very thin aluminium, thus reducing pressure to a minimum.

Professor LENDZIAK (Warsaw) communicated a paper entitled "The Radical Procedure for Malignant Disease of the Larynx in the last 50 Years." The author not being present only an abstract of it was read. In a historical review which he gave of the positions of different surgeons in reference to this question he said that the first in this field was Billroth who in 1873 removed a carcinomatous larynx with good result, and since that date total or partial laryngectomies had been performed nearly every year. The general discussion on this subject at the International Congress held in London in 1887 promoted the knowledge of the surgical methods in a high degree. Endolaryngeal methods were chiefly advocated by Fränkel of Berlin, and in Sir Felix Semon's hands "laryngo-fissure" had given the most brilliant results—namely, 80 per cent. of recoveries lasting from four to eight years. Partial or total resection of the larynx had been chiefly practised in Germany, where von Bergmann and Gluck obtained recoveries which continued for periods of from five to 11 years. Professor Lendziak had studied the records of 1002 cases of carcinoma of the larynx occurring in all countries and operated on by all methods. He found that the results had improved considerably since 1888. Laryngo-fissure gave the best results (50 per cent. cures) if used early enough; recurrence was best prevented by total extirpation, whilst mortality was highest by the last-named method. Therefore laryngo-fissure was the safest method. As long as cancer was a local disease it could be cured by local measures.

Dr. IMHOFER (Prague) read a paper entitled

"*The Knowledge of Tuberculosis of the Larynx by the Ancient Greeks and Romans.*"

He showed that Hippocrates and Celsus distinguished this condition from others and used dietetic treatment. Galen was the first to recognise it as an ulcerating condition and ordered his patients to take certain liquids whilst lying on their backs, so as to allow of the liquid entering the larynx. It was interesting to note that Dr. Heryng of Warsaw quite recently rediscovered this method.

Professor JURASZ (Heidelberg) read a report entitled

International Laryngo-Rhinological Congresses.

This gave rise to a discussion on the advisability of holding another congress, and it was decided to form an international committee which should decide where and when the next congress should take place. Sir Felix Semon was selected to represent England on the committee which will consist of six members.

Dr. VOHSEN (Frankfort) described his method of transillumination of the accessory sinuses and demonstrated it practically on several persons. He advised it especially for the frontal sinus. The conditions necessary to success were the use of a very small instrument, good regulation of the light, absolute darkness of the room, and application on the floor of the sinus. It was essential to remember that previous inflammations left behind them thickenings or other changes of the mucous membranes, so that the definition of the pictures was somewhat altered by them. The transillumination of the antrum of Highmore also gave good results, but for differential diagnosis it was not quite safe as cysts or thickened walls might give the same appearances as accumulations of pus.

The time occupied by the reading of papers and the discussions having been longer than was expected a good many papers had to be mentioned only by their titles. As a social meeting the Congress was a complete success. Not only were the members invited to a banquet by the city of Vienna but even the Governor of Lower Austria, who represented the Protector (the Heir Apparent), held a grand reception in their honour. At the banquet given by the city the magnificence of the town hall was well displayed, whilst at the reception in the stately old renaissance palace of the Governor there was a brilliant assembly of scientific men, titled personages, diplomatists, and eminent State dignitaries. A special entertainment committee for the lady visitors was formed by the ladies of the general committee of the Congress, the items of their programme including a variety of excursions and theatrical performances. In connexion with the Congress there was an exhibition of objects relating to laryngo-rhinology, œsophagoscopy, and bronchoscopy. It included instruments for examination, operation, treatment, and illumination, as well as numerous manuscripts of historical value, books, anatomical and pathological preparations and illustrations which belonged to Türck and Czermak, the first laryngoscopes used by them, and the first collection of clinical pictures of laryngological cases. Many pictures and specimens from the Vienna Laryngological Clinic were also on view, while Dr. Onodi, Dr. Hennig, and many foreign physicians contributed numerous objects of interest.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Port Sanitary Authority: Annual Report of the Medical Officer of Health.

THE annual report of the medical officer of health to the port sanitary authority contains many interesting statements. The regulations for the examination of vessels arriving in England from foreign ports are very similar to those in force since 1896, with the exception that the definitions of the terms "infected" and "suspected" ship have been modified.

The term "infected" ship is limited to a ship on which there is actually on board at the time of arrival a case of cholera or plague within seven days before arrival, or a case of yellow fever within 18 days before arrival. At the same time the term "suspected" ship is used as applying to a ship on which there has been a case of cholera or plague more than seven days before the arrival of the ship, or a case of yellow fever more than 18 days before arrival, whether the case has occurred in the port of departure or in another port in the course of the voyage, or at any time during the voyage, and on which no fresh case of cholera or plague has occurred within seven days, or of yellow fever within 18 days. New provisions have also been made prescribing the procedure to be followed with a view to prevent the transmission of plague by rats on board ship and the escape from the ship to shore of rats that may be infected with plague. With a view to obviate the first of these dangers rats are in all cases to be destroyed when the ship is infected with plague or when rats in the ship are infected with that disease. In the case of a ship which is not infected, but is a suspected ship by reason of plague, this procedure is not obligatory, except where the medical officer of health requires it to be followed. Epidemics of plague have long been known to be almost invariably associated with similar outbreaks among rats and other animals, but it has only recently been universally recognised that the rat plague precedes, and is chiefly responsible for, the spread of plague amongst human beings. Bubonic plague in man is entirely dependent on disease in the rat. The infection is conveyed from rat to rat and from rat to man solely by means of the rat flea. The reader of the paragraphs on the dangers of infection by means of rats must be at a loss to know why, in the case of a "suspected" ship by reason of plague, the destruction of rats is not obligatory also. The report states that during the year 1907 3169 rats have been examined by the corporation bacteriologist.

Munificent Donation to the Royal Infirmary.

The executors of the late Mr. Edward Robert Bickersteth (for many years surgeon to the Royal Infirmary and latterly consulting surgeon) have intimated to the committee their intention of forwarding a cheque for £10,000 as a gift from the late Mr. Bickersteth towards the fund for the erection of the new out-patient department at the Royal Infirmary in which he took such a deep interest.

St. Paul's Eye and Ear Hospital: The Prevention of Blindness in Children.

The annual meeting of the supporters of this charity was held at the town-hall on May 25th, the Lord Mayor (Dr. Richard Caton) presiding. The report showed that during the year 1907 7328 cases of diseases of the eye, 1720 cases of diseases of the ear, and 56 unclassed cases were treated. There were 775 in-patients treated. The number of operations amounted to 1167. In accordance with the recommendation of the British Medical Association an almoner had been appointed who would check, it was hoped, any abuse of the charity. Owing to the number of accidents in the workshops at the docks caused by steel chips which penetrate the eyeball and unless removed inevitably cause its total destruction, an electromagnet was purchased at a cost of £56. This had been successful in extracting the steel in every case which had come to the hospital since its purchase. The medical staff had been impressed with the inadequacy of the usual methods of treating ophthalmia in newly born infants, and they had taken advantage of the new Notification of Births and Registration of Midwives Acts to enlist the help of the municipal health authorities in an effort to prevent its disastrous results. A ward had been given up to the work and arrangements had been made for the admission of mother and infant immediately on the detection of the disease. It was believed that St. Paul's Hospital was the first to make such an organised effort to cope with a disease which was estimated by the Royal Commission on the Blind in 1889 to be the cause of blindness of 7000 people in the United Kingdom and to cost £350,000 annually. Dr. Arthur Nimmo Walker, the secretary of the medical board of the hospital, in seconding the re-election of honorary officers and members of the committee, described in detail the arrangements which had been made in the hospital to combat purulent ophthalmia in newly born infants and emphasised the importance of getting hold of the infants in the earliest stage of the disease.

June 2nd.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Crippled Children's Union.

THE annual report of the Birmingham and District Crippled Children's Union, which was presented at the recent annual meeting of the subscribers, refers with pride to past well done work and with increasing hope to a future of greater opportunities. During the past year 297 children were sent to convalescent homes at a cost of £800 and there can be no doubt that the subscribers will cordially indorse the managers' opinion that the money could not be spent in a more productive way so far as lasting curative results are concerned. The number of new cases dealt with during the year was 251 and the total number of cases 1085. The only drawback to the record of work done was the fact that it had resulted in a monetary deficit of £51 and consequently the total deficit is now £90. The hopeful outlook is due to Mr. George Cadbury's gift of a house and grounds at Northfield, to be used as a convalescent and nursing home. In this new home the society looks forward to being able to give to cases of tuberculous disease of bone that perfect rest and fresh air which are such necessary and efficient curative agents. To get the best possible results out of Mr. Cadbury's splendid gift and to make suitable provision for about 70 patients, 24 of whom will be undergoing open-air treatment, it will be necessary to spend about £4680—£3680 for re-arrangement and £1000 for furniture and fittings. To meet this expense the society possesses a building fund of £2400, therefore it will be necessary to appeal to the public for the remaining £2280. There can be little doubt that this comparatively small sum will be forthcoming if the committee places its claim clearly before the public, for the object of the society appeals strongly to all classes.

The Clearing of the Slums.

The report of the housing committee to the city council shows that the work of improving the slum area is proceeding regularly and satisfactorily, though it may be, on account of difficulties, slowly. In about six years the medical officer of health has reported 4532 houses as unfit for human habitation; of these 1213 have been taken down, 1608 have been converted into habitable places, 35 have become workshops, 317 are under repair, and notices are outstanding on the remainder. The committee reports that closing orders are never applied for until negotiations have utterly failed and it is its desire to preserve as many cheap small houses as possible in the city for the convenience of the working people. A part of the committee's scheme of work which is perhaps the most valuable is that which deals with the conversion of closed courts into open terraces; this has been carried out to a comparatively limited extent, for only 90 courts have been opened up by the removal of 152 obstructing buildings; but the results have been so successful from the point of view of the health and habits of the occupants that this part of the scheme is to be extended. At present it is the intention of the committee to commence in the centre of the city and to work outwards towards the suburbs in all directions so that the results may become obvious from all sides. The work is so obviously advantageous to everyone that, as a rule, it has secured the support of the property owners affected and the cost to the city is lessened by taking the improvement of the value of the property into consideration in estimating the compensation which must be paid in certain cases. So far the cost has been £5047, and in the estimates for the current year £3500 are provided for the compensation which will probably be necessary in association with the more extensive plan of work.

The Birmingham Medical Benefit Society.

The annual report of this society shows a sound financial position and a record of helpful work which might be greatly increased if the members of the medical profession in the district would become members of the society in greater numbers. The objects of the society are to help poorer members of the profession and, in the event of their deaths, their widows and children. At present the society, according to the authority of Sir James Sawyer, has 400 members out of 4000 medical men of the district who are eligible; nevertheless, as Dr. E. M. Whitcombe, the President, pointed out, it possesses invested and other funds to the amount of £16,000 and it provided in grants last year the sum of £763.

Dr. H. Malet of Wolverhampton was made President for the ensuing year and Sir Thomas Chavasse was appointed President-elect.

A Result of Medical Inspection.

At a recent meeting of the Bilston education committee it was stated that it had been found necessary in some cases to follow up the inspection with nursing, and a motion was adopted requesting the urban district council to appoint a nurse jointly under the Notification of Births Act, 1907, and the Education Act, 1907.

Hospital Saturday Collections.

The annual collection was made in the various works of West Bromwich last Saturday and the total result reported on Monday last was £776. Last year the total was £933, and that amount may possibly be surpassed this year, for at the time stated several of the large works had not reported their contributions. The collection is made on behalf of the West Bromwich and District Hospital. At Oldbury the collection on Saturday reached the sum of £388, or £100 more than the amount at the same period last year.

Increased Birth-rates.

The fall of birth-rates is so common that it is interesting to note two increases in this district. At Yardley Dr. G. Wilson states in his annual report that the rate rose during the past year from 25·9 to 26·7 per 1000, and at Dudley Mr. J. H. Wilkinson reports that it increased from 29·73 to 31·34 per 1000. At Yardley during the same period the death-rate fell from 12·6 to 11·3 per 1000 and at Dudley it was 17·3 per 1000, a little more than in the previous year.

June 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Sanatorium Treatment in Newport.

THE Newport (Mon.) board of guardians has for some time treated the consumptive patients under its care in a building which is quite distinct from the workhouse and the results have been very satisfactory. During the past few months the corporation has had under treatment at the isolation hospital persons of the non-pauper class suffering from pulmonary tuberculosis. A large wooden hut was erected in the grounds of the hospital at a total cost, including furniture, of £1000. There is accommodation for 14 patients but for the present it is being occupied by six, as it is anticipated that the maintenance of this number will absorb the £350 per annum which have been allocated for the purpose by the corporation. Patients are admitted for one month with the object of giving them the benefit of a training in the methods adopted in the open-air treatment and of training them in respect to the precautions necessary to prevent them from infecting their friends and reinfecting themselves. No charge is made to the patients, who must, however, be necessarily residents in the town of Newport. The medical officer of health (Dr. J. Howard-Jones), upon whose recommendation the scheme was adopted, is hopeful that it will result not only in a reduction in the prevalence of the disease in the borough but will also place patients on the road to recovery.

A Clean Milk-Supply.

At a sessional meeting of the Royal Sanitary Institute held at Shrewsbury on May 23rd a discussion upon the inspection of dairies and cowsheds was introduced by Mr. T. W. H. Garstang, medical officer of health of several rural districts in Cheshire. Dr. James Wheatley, medical officer of health of Shropshire, discussed the possibility of keeping cattle in the open air for the whole year and gave an interesting account of some experiments which have been made in recent years at the Harper-Adams Agricultural College in Shropshire with a view of ascertaining the effect upon cattle of leading a completely open-air life. Two lots of cows were selected as closely alike as possible. One lot was brought into the sheds each night commencing at the beginning of November, and the other lot was kept out until the beginning of December. Taking the average results the cows that were kept out all night gave more and richer milk and gained more in weight than those that were brought in. The results for the four years during which the experiments were conducted were decidedly in favour of leaving the animals out during the night. Observations made during very cold nights found the animals lying close to the homestead. No shelters were available, but the animals did not appear to seek shelter from the hedges. Dr. Wheatley expressed the opinion that these experiments entirely disposed of the tradition among farmers that warm and therefore ill-ventilated cowsheds were necessary for the free production of milk. The difficulties attending the application of this open-air system were pointed out by the Principal of the Harper-Adams College; they were difficulties of management and ought not to be insuperable. The principal drawback was the irregular distribution of the manure. The cows left it for the most part in the sheltered spots, around hedges and near gateways. The surface of the land, too, in a wet season became trodden down, to the detriment of the herbage in the following summer. If these difficulties could be overcome the problem of a clean milk-supply would be very nearly solved.

The Midwives Act at Cardiff.

At a meeting of the Cardiff health committee held on May 26th, the medical officer of health reported upon the alleged negligence of a midwife. It was decided to report the case to the Central Midwives Board and on the suggestion of the chairman, Mr. J. Robinson, it was decided that a medical man should give brief lectures once weekly on the subject of midwifery for the benefit of those midwives who were registered but had not passed any examinations.

Bristol Poor-law Infirmary.

The attention of the Bristol board of guardians has once more been drawn to the unsatisfactory arrangements that are made for the sick and old or infirm paupers at the Eastville workhouse. In a report by Mr. E. B. Wethered, one of the Poor-law inspectors of the Local Government Board, the danger in the event of fire of still using wooden huts for the accommodation of patients is very forcibly pointed out. There are two such huts, each containing 40 beds, occupied by men, and two with 20 beds in each for women. There are many helpless persons in these buildings the retention of which throws a very great responsibility upon the board of guardians. For more than ten years the question of providing adequate accommodation at this workhouse has been under discussion and a few years ago plans for suitable buildings were actually prepared and approved, but chiefly on the score of expense the work was not proceeded with. A policy of inaction is now being advocated by a majority of the members of the board of guardians, first of all on the plea that the report of the Royal Commission on the Poor Laws may recommend drastic changes in their administration, and, secondly, on account of the adoption by the Government of the principle of old-age pensions. In the meantime the principal officials at the Eastville workhouse must be having a very anxious time.

Bristol and West of England University.

The near prospect of securing a University for Bristol and the West of England being now assured it is proposed to endow a chair of Anatomy in the new University to perpetuate the memory of the late Dr. Edward Markham Skerritt who for several years rendered distinguished services to the Faculty of Medicine of University College, Bristol, both as dean and professor of medicine. An appeal has been issued for subscriptions, which may be sent to the treasurer, Markham Skerritt Memorial Fund, Faculty of Medicine, University College, Bristol.

University College, Bristol.

The Council of University College, Bristol, has appointed Mr. Cyril Hutchinson Walker, B.A., M.B. Cantab., F.R.C.S. Eng., ophthalmic surgeon to the Bristol General Hospital, to the post of additional lecturer on ophthalmology in the Faculty of Medicine of the College.

A Medical County Councillor.

Mr. Rees Thomas Edward Davies, L.R.C.P. Edin., M.R.C.S. Eng., L.S.A., J.P., was on May 25th elected representative for Bedwellty West on the Monmouthshire county council.

June 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Aberdeen Royal Infirmary: Great Donation from Lord Mount-Stephen.

A SPECIAL meeting of the directors of the Aberdeen Royal Infirmary was held on May 29th. The chairman informed the board that he had received from New York a bank draft for £26,758 6*s.* 3*d.* sent to him by direction of Lord Mount-Stephen. In a letter dated May 27th his lordship explained that the above-mentioned amount was the proceeds of railway stock which he at first proposed to transfer to the Royal Infirmary as an addition to its investment fund. Lord Mount-Stephen proceeds to say: "Since I had the pleasure of seeing you in London and hearing what you had to say about the position of the infirmary I came to the conclusion that the best use that could be made of my gift was to spend it exclusively on the permanent improvement of the hospital, rather than in providing for an increase of income. What I mean by 'permanent improvement' is expressed by the directors in their last annual report where they state that 'the most urgent necessities of the hospital will require a sum of at least £25,000.' Let me say in conclusion that I should consider it but little short of a calamity, if what I have done for the hospital should have the effect of weakening the interest of the people of Aberdeen in the old infirmary in which I was a patient 62 years ago." The board expressed its feeling of most grateful appreciation of Lord Mount-Stephen's continued goodness to the infirmary, a feeling which the board was sure was shared not only by the citizens of Aberdeen but also by the whole population of the wide district benefited by the infirmary and it thanked his lordship cordially for his munificent and most opportune gift.

University of Edinburgh: Retirement of Professor Crum Brown.

For some time past it has been rumoured that Professor A. Crum Brown, professor of chemistry in the University of Edinburgh, proposed to retire from his University duties. The rumour has passed into accomplished fact, for his resignation has been accepted by the University Court. All the men who occupied the medical chairs in Edinburgh in the early "seventies" have now passed from them. Professor Crum Brown was the only one remaining after Sir A. R. Simpson resigned. Sir William Turner is the only one who by becoming Principal on resigning his chair retained his University connexion. Professor Crum Brown has occupied the chair for 39 years. Coming early in the medical curriculum as chemistry does, it has been a very large class and a class that is a great strain on a teacher in many ways.

A New Chair.

An important step in the equipment of scientific education has been taken in the endowment and constitution of a chair of pathology and bacteriology in the Royal Veterinary College, Edinburgh. This has been made possible by the munificent gift of £15,000 by Mr. A. I. MacCullum, J.P., M.R.C.V.S., himself an old student of the College. At a recent meeting of the board of management Dr. Gerald R. Leighton, who has taught these subjects in the College for the past six years, was unanimously appointed to the chair. Dr. Leighton's best-known works deal with British reptiles from the field naturalist's point of view, but he has been a voluminous writer on many phases of animal life. He is M.D. of the University of Edinburgh and a Fellow of the Royal Society of Edinburgh.

The Inspection of Meat in Scotland.

For some time past the subject of the inspection of meat has been prominently before the public health authorities. Largely owing to the efforts made in the matter by the corporation of Glasgow an inquiry into the whole question of meat inspection in Scotland was ordered by the Local Government Board and conducted by its medical inspector, Dr. F. Dittmar. The result of this inquiry is embodied in a report just issued. In this it is stated that while cattle are generally killed in licensed slaughter-houses and are thus subject to a certain measure of inspection, it would appear that pigs destined to be cured for the production of ham and bacon are almost wholly killed at the place of feeding—i.e., at farms, &c. The reason given by the trade for this custom is that "driven pork" does not cure well. The result is that these carcasses are not examined by the public health officials and any kind of diseased carcass may be dressed and cured and put on sale. A notable difference as to the prevalence of tuberculosis in pigs emerges in this report. In Glasgow during 1906 of 45,456 pigs slaughtered 3040, or 6·68 per cent., were found affected with tuberculosis. In Edinburgh, of 6175 slaughtered only one, or 0·016 per cent., was affected, while in Dundee only 0·60 per cent. were affected. The explanation given in Edinburgh and Dundee for this very striking difference is that pigs in the East of Scotland are fed only to a slight extent on milk or milk products, the food being mainly hotel or boarding-house scraps, while in the West of Scotland the pigs are said to be largely "dairy fed." Dr. Dittmar, however, finds it difficult to believe that the character of the food accounts for the great difference in the extent to which tuberculosis is present in pigs slaughtered in Glasgow, Edinburgh, and Dundee. He thinks there can be little doubt that difference in the method of examination practised in each abattoir will account to a large extent for the differences noted. As regards the methods of inspection the report states that in Edinburgh it appears to be efficient, but it goes on to say that in Glasgow the examination of each carcass, &c., is more searching and carried out in greater detail than in any other abattoir visited in Scotland. Dr. Dittmar then proceeds to suggest some points in which an improvement on existing conditions could be made. 1. Subject to certain exceptions it should be made illegal to slaughter any animal intended to be sold for human food in any but a duly licensed place. 2. The Local Government Board should be empowered to call upon burghal local authorities to provide public slaughter-houses, and that with a view to increasing the revenue of the slaughter-house, and thereby providing funds for more efficient management, in burghs of less than 6000 inhabitants no slaughter-houses other than public ones should be allowed within a radius of five miles of the burgh boundary; also, that where a slaughter-house is provided by a landward local authority all private slaughter-houses within a defined distance of the public one should cease to exist, and that power should be given to burghal and landward authorities to combine for the purpose of erecting a common slaughter-house. 3. That persons licensed and paid by the local authority should be appointed in landward districts whose duty it would be to kill animals intended to be sold for human food. 4. That meat inspectors and superintendents of slaughter-houses should possess certificates of competency in the work from some recognised examining body. 5. That recommendations for the guidance of meat inspectors in condemning carcasses might be issued. 6. That inspection by competent officers of all animals at the time and place of slaughter should be aimed at, that arrangements should be made whereby consignments of dead meat coming to a town should be inspected before being put on sale, and that the Government of this country should be satisfied of the thoroughness of inspection at the time and place of slaughter before meat is exported to this country. 7. That the Local Government Board should call for certain returns of the number of animals slaughtered yearly in public slaughter-houses.

The Medical Officership of Health of Edinburgh.

Owing to the retirement of Sir Henry D. Littlejohn the city of Edinburgh has to appoint a medical officer of health. There is already a rich field of candidates to select from—at least 12 well-known names are given. The salary is stated to be £800 per annum.

Clinical Research.

Through the medium of Dr. G. A. Gibson a gentleman, who meanwhile withholds his name, is desirous of establishing a laboratory for clinical research in connexion with the Edinburgh Royal Infirmary. A meeting of physicians to the infirmary has been called by Dr. Gibson to consider the matter and to see what steps it may be advisable to take and what form the scheme can take.

June 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Annual Meeting of the Royal College of Surgeons in Ireland.

THE annual general meeting of the Fellows of the Royal College of Surgeons in Ireland was held on May 30th. The annual report of the Council was received

and adopted unanimously, after which a discussion took place on the Irish Universities Bill in regard to its effect on the future of the College. The opinions arrived at are well set out in the following motion, which was proposed by Sir Charles A. Cameron, C.B., ex-President, professor of chemistry and of hygiene (and historian) of the Royal College of Surgeons in Ireland; seconded by Mr. J. S. McArdle, ex-President of the Irish Medical Association and professor of surgery, Catholic University Medical School; and unanimously carried by the meeting:—

That this College, while in no way desiring to interfere in the question of University education, views with alarm the consequence to the College which will be brought about by the establishment, under the Irish Universities Bill now in Parliament, of a State-endowed medical school in connexion with the proposed new University in Dublin, for it is to be anticipated that serious damage and loss will result to the unendowed school of this College and, therefore, to the Royal College itself, from that State-aided competition.

That it is contrary not only to justice and fair-play, but also to the public interest, that this College, established by Royal Charter, and its school, which for a century and a quarter have done great and important work for the State and the country, and which, if permitted, would be competent to continue that valuable work, should be crushed.

That the College approves of the steps taken by the Council to bring its claim for a Government grant for its school to the notice of the Chief Secretary, and it hereby expresses its belief in the justice of that claim, and presses it on the favourable considerstion of the Government.

Sir Lambert H. Ormsby supported the motion, recalling that the crisis had now arrived in the history of the College, of which he had foreshadowed the possibility in his own presidential address at the corresponding annual meeting of June, 1904, and spoke with conviction as to the danger to the medical school attached to the College, and in due course to the College itself, which had conferred, he said, "such lasting benefit on the general public by insuring that every year highly educated and fully qualified Fellows and Licentiates received their diplomas to practise surgery in Ireland and different parts of the world, while during the long period of its existence as a licensing body its paramount aim had been high culture and efficiency, unbiassed by political or sectarian influence of any kind." Mr. John Lentaigne, now President of the College, dwelt eloquently, as a Roman Catholic, on the religious liberality displayed by the College; and the audience were distinctly impressed with the fact that the issue ahead of the College is a very serious one.

The Election of Officers at the Royal College of Surgeons in Ireland.

The annual election of President, Vice-President, Council, and secretary of the Royal College of Surgeons in Ireland was held on Monday, June 1st. For the presidency, vice-presidency, and secretaryship the election was in each case unopposed, but the contest for seats on the Council was actively carried out. A total number of 268 votes was recorded; three were returned by too-late posts and five were "spoilt in the making." The following were elected and I have appended the number of votes recorded for each:—(President, John Lentaigne; Vice-President, Robert H. Woods; secretary, Sir Charles A. Cameron) Sir Henry R. Swanzy, 229; William Stoker, 162; Sir Charles Cameron, 238; Sir Lambert Hepenstal Ormsby, 180; Richard D. Purefoy, 190; Henry Gregg Sherlock, 185; Sir Charles B. Ball, 204; John B. Story, 208; Edgar D. Flinn, 161; Sir Thomas Myles, 216; Sir Arthur Chance, 210; Richard Lane Joynt, 176; R. Bolton McCausland, 168; Thomas E. Gordon, 175; Edward Henry Taylor, 201; G. Jameson Johnston, 176; William Taylor, 193; R. Charles B. Maunsell, 175; and William Ireland Wheeler, 195. Two members of the past year's Council have lost their seats, Dr. Thomas Donnelly, the active secretary of the Irish Medical Association, and Mr. J. S. McArdle, who has announced his candidature in the usual official way for the vice-presidency of the College in 1910–1912. Mr. J. B. Story has done the same.

Cerebro spinal Meningitis.

Several cases of "spotted fever" have occurred in the Lurgan district. Two deaths have taken place in the Lurgan workhouse fever hospital within the week ended May 27th.

The Report of the Belfast Health Commission.

At a meeting of the Belfast water commissioners held on May 28th reference was made to the difficulty experienced in obtaining copies of the report of the Belfast Health Commission. It appears that the Local Government Board thought it right to issue the report in the first instance to the corporation of Belfast and to allow an interval to elapse before sending copies to the press. These copies were despatched on April 24th and on that date a copy was also forwarded to the secretary of the water commissioners. The chief clerk of the corporation has since sent three copies. As the question of the water-supply was specially under consideration, and as £2000 were spent by the commissioners in getting up evidence, naturally they are annoyed that they cannot—even by paying for it—procure a copy of the report, and as one of them said at the meeting, "How otherwise could the commissioners be in a position to comply with the recommendations made." In reply to a question in the House of Commons on May 28th the Chief Secretary said that 250 copies of the report were printed at the expense of the Belfast corporation and of these the Local Government Board had 150, nearly all of which had been distributed amongst public bodies and interested parties. The corporation has declined to incur the expense of printing additional copies and the Chief Secretary had no power to compel it to do so. As, however, the Chief Secretary said the report is of general interest he would lay it on the table at an early date.

Consumption in Belfast.

The Local Government Board has approved of an arrangement by which, as proposed by the Belfast city council, ten further beds in the Forster Green Hospital will be allocated for the use of consumptive patients nominated by the public health committee of the corporation.

The Irish Medical Association.

The annual general meeting and conference of this association will be opened in the Royal College of Surgeons, Dublin, on June 10th. The annual dinner will take place on the same evening, and on the next day the President-elect (Sir William J. Smyly) will give a garden party in the Zoological Gardens, Phœnix Park. The third day (Friday) is to be devoted to an excursion at Glendalough. From the sixty-ninth annual report, to be presented, it appears that on Dec. 31st last the association consisted of 726 members. Financially, the income received, with the balance in hand at the close of last account, amounted to £782 and the expenditure to £730, leaving a credit balance of £51.

British Dental Association.

The British Dental Association is to visit Belfast for its annual meeting at Whitsuntide from June 6th to 9th. The opening meeting is to be held on Saturday, June 6th, in Queen's College, Belfast, when an address will be given by the President, Mr. J. J. Andrew, L.D.S., of Belfast. On the previous evening a popular lecture on the Teeth of the People: a National Asset, will be given in the Technical Institute by Mr. L. Matheson, L.D.S., of London, and on Saturday night the annual dinner will be held in the Grand Central Hotel, Belfast.

Bovine Tuberculosis in Belfast.

At a meeting of the Belfast corporation held on June 1st a report was given by the city veterinary surgeon to the effect that of 3452 milch cows examined only one had been affected with tuberculosis, and that of 27,446 cattle slaughtered in the Belfast abattoir in 1908 only 384 were found to be tuberculous, or 1 in 70. Mr. Councillor Gregg, M.R.C.V.S., a member of the public health committee, immediately challenged these figures, and said that until the tuberculin test had been applied it could not be definitely said that cows examined were free from tuberculosis. Mr. Gregg, who is also the honorary secretary of the North of Ireland Veterinary Association, has since this statement was made to the corporation written to the Belfast press showing that only in one case of the suspicious dairy cows could the veterinary surgeon of the corporation prevail on the owners to allow the tuberculin test to be used and in that case a positive reaction was present. It is clear therefore, that there has been some fallacy in the statistics Under the new Dairies and Cowsheds Order adopted by the corporation the veterinary surgeon will be able to use more freely the tuberculin test. In reference to the reported absence of tuberculosis in such a large number of slaughtered animals Mr. Gregg says that the majority of these were young cattle from the country districts where the disease is not so prevalent as among older milch cows in crowded cities.

June 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Administration of Antidysenteric Vaccines by the Mouth.

AT the Biological Society on May 16th M. Dopter recorded some experiments on the vaccination of fully grown mice by feeding them with bacilli of dysentery of the Shiga type, both living and dead. For this purpose he weighed out 0·005 milligramme of these bacilli, obtained by scraping an agar culture in a Roux's chamber, and having killed them by submitting them to a temperature of 60° C. for an hour he dried them in a vacuum. He made an emulsion of the bacilli in milk and fed the mice with them for three days running and this process was found to confer immunity. The subcutaneous inoculation of one or even two ordinarily fatal doses of living bacilli in the animals thus treated from 12 to 15 days afterwards did not kill them, whilst control animals died in three or four days. His experiments showed that one single ingestion of this dose is insufficient to bring about immunisation, and that it is only conferred with weaker doses when they are repeated daily for a week. The immunity is not complete until about the end of 12 days and it usually lasts for a month. From the first to the twelfth days, whilst the state of immunisation is in process of development, a "negative phase" is induced, and the animal is more sensitive than the control mice to an ordinary fatal dose. Similar results were obtained with living bacilli; with these the optimum dose corresponds to the amount of emulsion obtained by scraping the culture from one agar tube after 24 hours' growth, and this dose should be repeated in a few days.

Syphilis and Myopia.

M. Antonelli has communicated a paper on this subject at a meeting of the French Ophthalmological Society. He said that syphilis may be the sole cause of myopia, it may aggravate it, or it may complicate it. The first proposition is illustrated by congenital syphilis, for a number of persons afflicted with that malady are myopic from early childhood or become so as the result of such disorders as interstitial keratitis. This congenital, or at least infantile, myopia of the subjects of hereditary syphilis is sometimes monocular; it is often unequal in the two eyes and may occur in combination with dystrophies of the ocular membranes and lesions of the fundus. Acquired syphilis shows itself rather by aggravating and complicating myopia in patients who already have it more or less strongly marked and who are in a state of general bad health. With regard to the complications there is no doubt that myopic eyes are predisposed to the later manifestations of syphilis. Chorio-retinitis with damage to the papilla, macular or intra-vitreous hæmorrhages, exudative troubles of the vitreous, and retinal detachment occur most frequently in myopes of old standing, who have become tainted with syphilis, and it is easier to prevent these complications by energetic and prolonged mercurial treatment than it is to cure them.

The Re-education of the Muscles in the Treatment of Different Palsies.

The general term of muscular re-education covers a series of very different procedures which must not be confounded with each other. The treatment of ataxia, paraplegia, hemiplegia, and spasmodic paralysis requires different methods for each. Passive movement and the long-continued training in voluntary movements combined in various manners have given rise to several methods, of which certain ones, such as the treatment of ataxia, are widely known and appreciated. M. Faure brought the question before the Medical Society of Paris on May 8th and pointed out that others, such as the treatment of spasmodic palsies, are less generally recognised. The educative treatment of hemiplegia gives appreciable results, but less striking than when it was applied to cases of ataxia. These methods demand the expenditure of much time and patience and must be carried out with the utmost precision.

The Thermic Effects of High-frequency Currents on the Body.

At the Academy of Sciences on May 11th M. Zimmern and M. Turchini dealt with this subject. Tracings of arterial blood pressure made on the dog show that this pressure is not affected by high-frequency currents. In man it sometimes produces a slight drop of one or two centimetres, but volumetric variations of the pulse, which indicate vaso-dilatation, are more frequent results. An animal under the influence of these currents shows a rise of temperature of several tenths of a degree. Dogs whose temperature is falling progressively under the action of chloral show a similar increase which depends upon the calorific effects of the current, and the dog seeks to counteract these effects by rapid breathing. In the same way a man whose temperature has been thus raised several tenths of a degree attempts to counteract the access of heat by peripheral vaso-dilatation. The increase in temperature is not always sufficient to induce sweating. It would thus seem that high-frequency currents fulfil a want in affording a method of increasing the body heat without expense to the organism, and in this way they form a new procedure in thermo-therapy, more gentle than those already in use but with similar indications for employment. Indirectly, by the vaso-dilatation which it causes, it is a useful adjuvant in dealing with renal congestion and visceral neuralgia, and this action explains the good effects which it has upon the obscure pains experienced in Bright's disease and arterio-sclerosis.

Tuberculous Rheumatism.

At a meeting of the Paris Medical Society held on May 23rd Professor Antonin Ponset, in resuming a discussion on Tuberculous Rheumatism, described investigations which he had made on this condition and on inflammatory tuberculosis. M. Dupuy de Frenelle recommended general treatment for the tuberculosis; hyperæmia, *effleurage*, and massage for the limb; and very cautious movement alternating with periods of rest for the joint. He did not think that the effects produced by ankylosing tuberculous rheumatism were so obstinate and so difficult to treat as Professor Poncet supposed.

Diagnosis of Cancer by a Specific Reaction with Micrococcus Neoformans.

M. Doyen, in a communication to the Biological Society, has stated that the blood serum of cancerous people contains specific bodies which possess a selective action upon an extract of powdered tumour cells and micrococcus neoformans and upon young cultures of that organism which results in fixation of the complement or in agglutination. The diagnosis of obscure cases of cancer may perhaps be best determined by a combination of three investigations—namely, the power of fixation of the complement, of agglutination, and the determination of the opsonic index.

June 2nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

International Conference on Cancer.

ON the occasion of the opening of the Cancer Institute in Heidelberg in October, 1906, an International Conference on Cancer was held in that city and in Frankfort. The success of that conference has induced the committees of different States to found an International Union for Cancer Research which met for the first time in Berlin on May 23rd under the presidency of Professor von Leyden. 13 States were represented, including Germany, Austria, Hungary, France, Russia, Denmark, the United States, and Japan, but England was not represented. The seat of the union will be Berlin. The aim of the union is to support institutions for cancer research and treatment; to compile international statistics concerning cancer; to establish an international bureau for the coördination of cancer research, and to edit an international journal on cancer. Professor von Leyden was elected honorary president, Professor Czerny of Heidelberg president, and Professor Marie of Paris and Professor Fibiger of Copenhagen vice-presidents. The third vice-president will be an American, to be elected by the American national committee. Professor Hansemann of Berlin will act as treasurer and Professor Meyer of Berlin as general secretary. The other members of the committee are Professor Podwyssowski of St. Petersburg, Professor von Hochenegg of Vienna, and Professor Golgi of Pavia. The first meeting of the union was held in the great lecture hall of the Pathological Institute; representatives were present of the Government, the University, the Army and Navy Medical Corps, and of the Medical Association of Berlin. Addresses of welcome were delivered by the Minister of Public Instruction, the Rector of the University, and by

Professor Orth (the successor of Virchow) who mentioned that Virchow's famous book on Tumours was left unfinished and especially in regard to the chapter on Cancer. He informed the meeting that this chapter had been written by the late *savant* but that at the time when it was to be printed new researches on cancer were published by Professor Waldeyer and Professor Thiersch in which Virchow's views were corrected. He agreed fully that his views must be revised but he had no time to rewrite the chapter on Cancer and therefore preferred to let his work appear in an unfinished state. The speaker said that if Virchow had witnessed the new experimental era of cancer research he would have undoubtedly brought his views into accordance with the new researches.

The first scientific paper was read by Professor Borrel of the Pasteur Institute of Paris on the problem of the etiology of cancer. He gave a historical survey of the views on cancer, saying that the question had gradually developed from a metaphysical problem to a matter of experiment. Alluding to the work of Ehrlich, Jensen, Bashford, and others, he pointed out the great importance of the discovery that cancer may be transplanted from one animal to another and that sarcoma may in the course of the implantations develop. It is stated that in cancer the normal cells become transformed and that at the same time they acquire the faculty of multiplying in an abnormal degree. The cause of the transformation and of the multiplication is, however, not yet ascertained; it is probable that they are produced by a certain virus, but all efforts to identify it have hitherto ended in failure. Professor Dollinger of Budapest then spoke on some results of the Hungarian statistics on cancer. He drew attention to the fact that in cancer the number of deaths is three times greater than the number of patients who had been under the care of medical men. It must thus be concluded that many of the patients are not aware of their disease or that they suffer so little that they do not require medical attendance. He then mentioned that in Hungary the number of cases of cancer in the country is only one-third of the number observed in towns and he gave a report of the frequency of cancer in the different organs. He concluded from the statistical tables that cases of cancer in which diagnosis and operation have been early have a lower death-rate than others.

Professor Jensen of Copenhagen discussed some problems of experimental cancer research, including researches on growths in larger animals and the causes of the alteration of the histology of cancer after the growth had been conveyed from one mouse to another. The cause may be in a peculiarity of the tissue of the second animal, in the internal qualities of the growth, or in a kind of pure culture produced by the frequent transplantations. Further problems were the action of different rays on cancer, the eventual discovery of an antiserum, and immunity. The fact that a certain species of mouse which was very much disposed to cancer in Frankfort became exempt in Norway leads to the conclusion that the climate, the alteration of food, &c., might be of importance. Experiments must further be made regarding heredity but 100,000 animals and coöperation amongst the different laboratories would be necessary for these investigations. The last paper was read by Professor Podwyssowski of St. Petersburg who spoke on the theory of irritants. He said that the irritation theory was one of the oldest theories to account for the development of cancer. As the result of recent researches it had been stated that certain irritants had an influence on the structure and the chemical composition of cells, so that they were right to suppose that those irritants might influence the development of cancer also as suggested by the late Professor Virchow.

June 1st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Italian Association for the Advancement of Science: Its Second Meeting.

THE "Congresso Italiano per il Progresso delle Scienze"—an "association" organised on the lines of the "British" and, after two abortive attempts within the last 60 years, successfully inaugurated at Parma last autumn—will hold its second meeting from Oct. 18th to 25th in Florence—time and place being *motivé* by the fact that about that date the third centenary of Evangelista Torricelli will be celebrated in the "City of Flowers," associated as she is with the best and latest work of that master in physics, theoretical and applied. An honorary committee, the President of which is His Royal Highness the Count of Turin and the *personnel* of which includes the first names in science, literature, and fine art, as well as distinguished members of both Houses of Parliament, has held its inaugural meeting in the Palazzo Vecchio (Town Hall) of Florence, at which the arrangements for the due carrying out of the programme of the association were the subject of harmonious conference. The municipality will lead off with a reception of the "Congressisti" in the Palazzo Vecchio, while the "Deputazione Provinciale" will not be behindhand in similar hospitalities held in the Palazzo Riccardi. The halls of the Leonardo da Vinci will also be placed at the service of the association. The city and commune will liberally subsidise the "war-chest" of the meeting and the Government is expected to contribute towards the funds already announced *ad hoc*. The working committee or "comitato scientifico" will have as President the Senator Vito Volterra, professor of applied mathematics in the University of Rome, and as Vice-Presidents a body of *savants* in which the medical calling is largely represented to preside over the sections and sub-sections in which the work of the association will be carried out. That work will be classified under three main catagories: (1) that of the mathematical, physical, and chemical sciences; (2) that of the biological sciences; and (3) that of the moral or humanistic sciences. These again will be subdivided into sections and sub-sections to be determined "a seconda delle opportunita di tempo e di luogo" (according as time and place may indicate), to be announced, moreover, at a convenient date. No effort will be spared to improve upon the success already achieved at Parma and to make the last fortnight of October next a memorable one for Florence and for those of the outer world who find attraction in science as well as in history and art.

The Cripple and the Maimed.

On May 29th Dr. Riccardo Galeazzi, professor of orthopædia and privat-docent in clinical surgery in the University of Turin, also Director of the Institution for the Care and Cure of Rachitis in Milan, gave in the latter city a lecture on the schools and workhouses for the cripple and the maimed. His audience was a distinguished as well as a numerous one, many practitioners of medicine and surgery, general and consultant, being in attendance. After an eloquent tribute to Dr. Pietro Panzieri, Italy's apostle in the relief and reclamation of the physically deformed, Professor Galeazzi stated that the proportion of "storpi e mutilati" (cripple and maimed) in society as a whole is 1 per 1000 of the population, while Italy has no fewer than 175,000, of whom 116,000 live in the most squalid misery. To come to the rescue of such Germany has 33 "schools of labour" (workhouses) with 2660 pupils, while Denmark, Sweden, and Norway are at the head of the movement, other nations having few such institutions or none at all. America, he remarked, is showing in the cause a characteristic energy and philanthropy in which Italy lags far behind. The "Istituto dei Rachitici" in Milan, however, the only Italian institution of the kind worth mention, has already done excellent work by its "Scuola di Lavoro" (school of labour), shortly to be supplemented (thanks to Donna Fanny Finzi Ottolenghi) by a "Casa di Lavoro" (house of labour) in which the instruction given in the school will have taken effect in actual production, placed as it will be under the skilled administration of the Istituto dei Rachitici. These houses of labour in other countries have succeeded in making 90 per cent. of the cripple and the maimed wage-earners and bread-winners, a proportion which in Italy would redeem 40,000 unfortunates from the misery and squalor in which they now live and die. Their effect in reducing her mendicancy—one of her most crying opprobria—is only too manifest. Dr. Galeazzi, in the course of his most interesting address, gave authentic instances of how literature, fine art, mechanical appliances, even science itself, had been enriched by the cripple and the maimed when the process of rescue and instruction had been opportunely begun and steadily carried out, illustrating his remarks by "projections" which placed in luminous relief the genius, artistic and mechanical, evoked from "society's victims" when taken in hand and treated skilfully in time. He concluded by an

appeal to the medical auditor (who, as stated, was numerously represented in the assembly) to coöperate in the work by giving his invaluable aid in the prompt reporting and due selecting of subjects for the "Scuola" and the "Casa" of Labour alike—subjects who, in the practitioner's judgment, might profit by these institutions and give prestige and support to their beneficial mission.

May 31st.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Professor August Forel on the Tasks of Social Hygiene in the Twentieth Century.

ON the occasion of Professor August Forel's visit to Budapest for the purpose of delivering an address on the Tasks of Social Hygiene in the Twentieth Century the town-hall was selected as the place of meeting and there was a very large attendance. Before presenting the chief points of his discourse I may give some particulars relative to his life and scientific work. He is a tall, grey man, lively in demeanour, and a quick speaker. He was born in the French-speaking part of Switzerland in 1848. He holds the degrees of doctor of medicine and doctor of philosophy. He was formerly assistant at the psychiatric clinic in Vienna, afterwards becoming professor in the University of Zürich, and now he practises his profession in Yvorne, a small village in Switzerland. He has never been wealthy, although enjoying a reputation which brings patients from all parts of the world to seek his advice. The two subjects which have formed the chief pursuits of his life are the treatment of mental diseases and the natural history of ants, the former being his professional occupation, while the latter is his pastime. On the subject of ants he has written one large work, together with more than 100 shorter memoirs in which he has described an immense number of varieties of these insects. As a boy of 16 years he undertook an experiment with a view to ascertain whether the community exists only as long as the mother ant survives. He made an anthill on the yard of his father's house and studied the insects for 10 years. When 30 years of age he became professor and director of a large lunatic asylum in Zürich, but in 1898 he resigned both appointments in consequence of a dispute with the Cantonal Government and entered on private practice. The great success of his first considerable work, "Die Sexuelle Frage" ("The Sexual Question"), is shown by its being translated into French, English, Hungarian, Swedish, Italian, and Spanish. The proceeds of the sale of this book enabled him to buy a house in Yvorne where he lives with his family and with two or three resident patients. Indifferent to the so-called pleasures of life and limiting his personal wants to the mere necessaries of existence, he passes the whole day in mental application and regrets as lost the time which has been otherwise employed. As already mentioned, his audience in the town-hall at Budapest was very large, comprising about 2000 persons, most of whom were medical men. He began his discourse with a survey of the progress and development of mankind during last century, saying that the most notable figure of the nineteenth century was neither Bismarck nor Napoleon but Darwin. He considered that the immense development of industrial undertakings has made the people of the present day very self-conceited. They are inclined to over-estimate their own mental capacity in comparison with the men of olden times and other continents. It cannot be denied that certain races of mankind are superior in brain power to some other races. For instance, mental work like that of the white races could never be expected from negroes. It has, however, been a great mistake on the part of the white races to under-estimate the immense progress, both material and intellectual, which the Japanese have made during the last 30 years. Some people say that the Japanese are only imitating us. But did not the European nations in the fifteenth century, the age of the Renaissance, imitate the Greeks and the Romans? And do they not now acknowledge the fact with justifiable pride? There was no difference, he said, between the mental capacity of the ancients and the moderns; the only difference was that we, the moderns, had inherited the experience of our ancestors and the great stock of scientific knowledge which they had accumulated with immense diligence and pains. We have in this way learned a great deal which was unknown to the Greeks and Romans. While over-estimating the triumphs of technics and industry we not only forget the reverence and respect due to the individual, but we lose sight of the great and important question how the human race can be improved and brought nearer to perfection. It is a false estimate of human duty not to prevent the propagation of the race by individuals of imperfect mental and physical development. One of the most important tasks of social hygiene and the medical profession was to prevent degenerates from propagating. It was also necessary to demolish several false gods—first of all, Bacchus and Gambrinus, who were a constant peril to the human race. Alcohol weakened the mental power even of those who took it in strict moderation. To remedy these many miseries of mankind was the task of social ethics, and those who worked in this good cause took for their motto the words, "Let us give more to the community than the community gives to us." The idea embodied in social ethics was self-sacrifice on the part of the individual for the good of the community, whereas sacrificing for one person was a kind of egoism. Women ought especially to beware of it. In some respects the female brain was inferior to the male brain, but in the qualities of mental alertness, sympathy, and perseverance women were decidedly superior to men. Social ethics have for their necessary supplement social hygiene, which aims at producing healthier and happier generations. Both of them aim at the prevention of human misery. Both of them, therefore, denounce alcoholism and the passion for money-making which presses so heavily on the masses and converts the working classes into mere proletarians. Both of them alike inculcate sexual purity and early marriage. Prostitution ought to be abolished by removing its causes and not by vain attempts to enforce repressive police measures. A student, aged 22 years, who loved a girl, aged 18 years, asked Professor Forel to advise him what to do, because some time must elapse before he could marry her on account of his inability to maintain a wife and the child who was to be expected. Professor Forel's advice in such cases is that the lovers should marry but should postpone procreation until their circumstances improve. Unhealthy and degenerate married couples who are for that reason ill adapted to be the parents of the coming race ought in his opinion to postpone procreation indefinitely. To forbid such people to marry would be inhuman, but to encourage them to propagate would be contrary to the interests of posterity. Professor Forel argues that as the earth is already sufficiently peopled now is the time to give preference to quality over quantity in the population. As a means of furthering this object he considers the artificial limitation of births to be justifiable. Suitable instruments for accomplishing such limitation have been devised and the use of them cannot be considered immoral. It would be just as reasonable to assert that it was immoral to wear spectacles which similarly do not belong to the body. Professor Forel is a zealous advocate of the emancipation of women, which he expects to be a leading feature of the twentieth century. Among the lower animals, he said, there is no example of the male making a slave of the female, this system being confined entirely to the human family. Women were justified in claiming the right of voting and it was a matter of astonishment to him that some women were indifferent to the attainment of this right. Finally, he expressed a hope that the time would come when all differences of nationality and language would be smoothed away. He was therefore an ardent supporter of Esperanto, a universal language which would bring the nations nearer to each other in the great work of humanity.

June 1st.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Sudden Death of a Prominent Surgeon in Western Canada.

IN the early morning of April 24th Dr. W. S. England of Winnipeg, Manitoba, died from cerebral hæmorrhage. He was 40 years of age. To not many of Canada's surgeons did success come so early in life as to Dr. England. Born in the province of Quebec 40 years ago he matriculated at McGill University, Montreal, in 1885 and received his degree with first-class honours from the same institution in 1889. After spending a year as interne in the Montreal General Hospital he proceeded to Winnipeg, and that he was made of more

than ordinary stuff is seen from the fact that at the time of his death he was professor of anatomy in the Manitoba Medical College, chief surgeon to the Winnipeg General Hospital, and also consulting surgeon to the St. Boniface Hospital of that city. The late Dr. England was a keen surgeon, thorough in his work, and of the very best judgment.

The Toronto General Hospital and the University of Toronto.

The complaint recently made in the public press of Toronto that the board of governors of the Toronto General Hospital in making the recent medical and surgical staff appointments had not dealt fairly by the medical faculty of the University has called forth from one of the members of the Senate of the University of Toronto, who is also a representative on the board of governors of the Toronto General Hospital, a reply, and as it places the connexion of the two institutions in a clear light some of the details will be interesting. Under the written agreement with the University of Toronto the Toronto General Hospital received $300,000. The city of Toronto contributed $200,000 and subscribers $700,000. The old hospital board brought in assets to the value of about $1,000,000. The specific agreement with the University called for the purchase of a block of land directly opposite the University holdings and the immediate erection of a modern hospital building to cost not less than $900,000. The section of the written agreement which would appear to make the members of the medical faculty of the University *ipso facto* members of the hospital staff reads as follows:—

> Medical Students.—The trustees shall allow any medical student of the University of Toronto to visit the wards of the hospital for the purpose of receiving instruction from the members of the Faculty of Medicine upon the payment of such fees and under such regulations and restrictions as the trustees may by any resolution or by-law from time to time appoint.

The writer goes on to say:—

> This is the agreement, and it certainly does not make the members of the medical faculty *ipso facto* members of the hospital staff. In my opinion it would be against both the interests of the University and the hospital if it did. How could the hospital maintain discipline on its staff or administer the affairs of the hospital if members of an outside body appointed by a different authority were to occupy positions on the hospital staff without being responsible to the hospital board? How can the board be made responsible for the care of the sick if it has not the power to appoint and remove those who attend them? A member of the staff who was incapable or neglectful of his duties could retain his position in spite of the board of the hospital if he happened to be a member of the Medical Faculty of the University.

Under the Hospital Act the board of governors of the Toronto General Hospital consists of 25 members, of whom five are appointed by the University of Toronto, five by the city of Toronto, eight by the Ontario Government, and seven by the subscribers. The strong point is made that the Toronto General Hospital is not a university hospital, yet nearly all the members of the new staff are members of the Medical Faculty of the University. That is to say, the old hospital board which brings assets to the value of $1,000,000, the subscribers with their $700,000, and the city of Toronto with its $200,000 donotion, are represented by a handful of city practitioners, while the University with its $300,000 donation controls at least nine-tenths of the staff.

The Feeble-Minded in Ontario.

Dr. Helen MacMurchy a short time ago, by command of the Ontario Government, made a careful inquiry into the history and present condition of the feeble-minded in the province of Ontario, the object being to further the proper care of them. Dr. MacMurchy says:—

> The only satisfactory method of dealing with the problem of the feeble-minded is to recognise mental defect in children, training them, and giving them all through life the care and supervision that will enable them to earn at least a part of their living, and protect them from the crimes and evils that threaten them in the outside world. Special classes in the public schools and special institutions for those needing permanent care are required for these. Where special classes have been tried in Great Britain, on the continent of Europe, and in the United States it is found that more than two-thirds of the children who are in them are seriously defective mentally and will always be dependents. From the special schools then, as a rule, they are taken to a special institution as their permanent home. These children should be taken charge of about the age of six or seven. Some of them can be taught to read, write, and do arithmetic. A part of their time should be spent in learning useful trades and occupations. As they grow older they should be treated somewhat differently, and any of them who can act as helpers, attendants, and members of the staff of the institution should be placed in these positions, but the really feeble-minded should never be allowed to go out into the world. No training or supervision will ever change the defective mind into a normal one. It is always to be remembered that in providing for the care of the feeble-minded the Government and the people are not taking up a new burden. We pay the cost of their maintenance now, while they should pay the cost of their own way partly or wholly by working under supervision. The jails, the Mercer reformatory at Toronto, the hospitals, the refuges, and the county poor house, have a number of feeble-minded persons as inmates.

Presentation to Dr. Walter B. Geikie.

A life-size portrait of Dr. Walter B. Geikie, Toronto, formerly Dean of Trinity Medical College and for over 40 years actively engaged in medical teaching in Toronto, was presented to him recently by former students and by him presented to the Academy of Medicine, Toronto. The presentation was made on behalf of the graduates in medicine of Trinity College by Dr. George A. Bingham who referred to the 51 years of Dr. Geikie's life as a medical teacher. Dr. Geikie spoke in feeling terms of his life work and said that 32 of his years, from April, 1871, until June, 1903, had been devoted to the founding and building up of Trinity Medical College which in 1903 amalgamated with the Medical Faculty of the University of Toronto.

Toronto, May 18th.

INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Frontier Campaign.

ALL the home papers have given full details of the mobilisation of a field force styled the Mohmand Field Force on the frontier to operate against the Mohmands. The force consisted of three infantry brigades, each containing one British and three native infantry battalions, with two sections of a British and a complete (four section) native field hospital, divisional troops having also a complete native field hospital. The principal medical officer of the force is Colonel H. R. Whitehead, R.A.M.C., and all the field hospitals have been equipped with ambulance riding animals (half accompanying the first advance) and as far as possible with dandies on the regulation scale, with full complement of Army Bearer Corps men, half the dandies and bearers being held in readiness at the base (Peshawar) until required. A native base hospital has been formed at Peshawar. Others are apparently mobilising at Lahore Cantonments and Rawal Pindi. Up to date of writing the casualties amongst the troops employed have been small and apparently all the wounds are gunshot, the few fatal cases being abdominal. Under the present peace organisation each division has a complete x ray apparatus belonging to it, with several specially qualified x ray specialists in charge. This x ray equipment is arranged so as to be capable of being moved on service and employed in the field hospitals if required. Each division has also a complete staff of specialists in sanitation holding the D.P.H. diploma, and also specialists in advanced operative surgery will accompany the division when mobilised for field service.

The Campaign against Plague in Bangalore.

Bangalore is very proud of itself just now and not without reason. Of the civil population alone 25,174 have been inoculated with the anti-plague serum, and this is a record that cannot be touched by even India's largest cities. Including the military section of the local population 27,512 people have been inoculated (up to April 10th, 1908). These are large figures and possible residents in other stations may be interested in a brief note of the manner in which the above total has been reached. At the present time what is called house-to-house inoculation is the special feature of the campaign that is being waged against plague in Bangalore. Since this system was started on Dec. 21st, 1907, no less than 11,393 persons have been inoculated. The original intention was to adopt a true house-to-house system. It has been found that many people were indifferent or even hostile to inoculation, while many others were quite unable to attend at the inoculation stations that were established. In these last a great deal of excellent work was done and the lower classes were induced to flock to the different centres arranged from time to time and to submit themselves to the, to them, new kind of operation. There were many residents, however, who held aloof, whether voluntarily or not, and the authorities thought that they might apply the old principle of "if the mountain will not go to Mahomet, Mahomet must go to the mountain."

Inoculation Procedure.

The procedure that was finally adopted was very simple.

Leading citizens were asked to coöperate with the authorities. In some instances the former arranged a sort of "At Home" for inoculation purposes; they fixed a day and a time and issued invitations to their friends (and not always to friends alone) to attend and to be inoculated. Sometimes, instead of using a private residence, a shamiana was erected in the street in the front of some house, the occupant of which took the lead in trying to get a large assembly of friends and others. There was music to let the local world know that something special was going on. There were sweetmeats for children and sometimes refreshments for adults, the immediate aim being to popularise inoculation, and it was gratifying to note how each man tried to improve upon the work done by others. It seemed to become almost a point of honour to attract as many people as possible—not as mere onlookers, but so that a "record" in the number of inoculations might be made. Mahomedans and Hindus entered into a kind of competition and when it is said that on one morning 714 persons were inoculated there cannot be a doubt that friendly rivalry helped to swell the figures. The residency surgeon from whom came the original suggestion regarding a house-to-house campaign against plague had somewhat different methods in view from those that were finally adopted but he was no doubt pleased with the results of the revised plan the working ont of which owed its success to his energy and tact.

Advantages from Inoculation.

As to the advantages resulting from inoculation it may be said that less than a score of cases of plague have occurred among the 27,512 persons inoculated, and only seven cases ended fatally. This is in striking contrast to the record of 1207 cases, of which 1008 proved fatal, among the uninoculated population. In several cases superficial abscesses formed at the point of inoculation, but these all yielded to medical treatment and in no single instance were there any ill effects of importance. On the one hand, specific cases might be cited as demonstrating the efficacy of inoculation as a preventive of plague. On the other hand, a number of people have been disabused of erroneous ideas concerning the supposed harmful effects of inoculation. There have been instances of fairly intelligent people believing that anti-plague inoculation led to one evil consequence or another. The closest observation conducted under conditions highly favourable to the ascertainment of facts has revealed nothing in the case of the many thousands of people who have been inoculated here to give ground to such belief. It should be added that the success that has attended anti-plague inoculation in the civil and military station of Bangalore is the more remarkable because of the fact that until quite recently the authorities in the city of Bangalore took no similar action. City and station adjoin each other; there is an incessant flow of intercourse between the people of the two places and plague or any epidemic in the one cannot but seriously threaten the public health in the other.

A Pasteur Institute for Burma.

The provision of a Pasteur institute for Burma is now assured, but some little time must elapse before the work can be started. The local community has come forward liberally in subscribing the better part of one lakh of rupees and the Government of India is understood to be addressing the Burma administration on the subject of ways and means for carrying the scheme into effect, the total cost of such an institution being, of course, much in excess of the sum that has been raised. The good beginning which has been made, however, insures that the scheme will be persisted with.

Proposed Legislation for Vaccination in Burma.

Leave will be asked at the next meeting of the Burma Legislative Council to introduce a Bill for the prohibition of inoculation and the licensing of vaccinators in Burma. The statement of objects and reasons shows that at present inoculation may be performed legally in any rural tract in Burma. It is a common thing throughout the province and its undoubted danger has been represented by successive vaccination officers. Since, however, the practice has been regarded as a safeguard by the people it is not possible to prohibit it except where full protection can be offered by the provision of a thoroughly efficient system of vaccination. It is possible to effect gradually the necessary improvements in the vaccination staff of one local area after another and inoculation can be prohibited gradually until the prohibition has extended throughout the province. A penalty extending to three months' imprisonment or a fine up to Rs.200, or both, is provided for anybody performing or undergoing inoculation in a specified local area. It is not proposed to make vaccination compulsory in rural areas. The Bill also provides for the licensing of vaccinators. At present vaccination, like inoculation, can be performed in rural areas by anybody, and it has been found that vaccination by unqualified persons entails serious risk. The Bill, therefore, only permits persons to perform vaccination who are licensed by the Government, and a penalty extending to one month's imprisonment or a fine up to Rs.50, or both, is provided for in cases of the infringement of the law.

Motor Ambulances.

The Rangoon General Hospital authorities have invested in a 30 horse-power motor ambulance which is fitted with a spring mattress and inflated rubber cushions and pillow for a patient who cannot sit up and seats for two patients who can. The new ambulance is said to be a vast improvement on the old dhoolies which it has replaced.

Plague in India.

The latest plague returns show that though the disease is widespread in a number of provinces heavy mortality is practically confined to a few cities and districts. In the Bombay Presidency, out of 1561 deaths for the week ending May 4th, 496 occurred in Bombay city alone, 201 in Karachi, and 208 in Baroda State, while there were only 69 in the whole of the Southern Division. In Bengal, for which the figures for a fortnight are given, the deaths in Calcutta were 266, but the Presidency division outside the city was practically free from the disease. In the Burdwan division, in which are included Howtah town and district, the figures were 12, but in the Patna and Bhagalpur divisions the mortality in the Patna, Saran, Darbhanga, Shahabad, and Monghyr districts was comparatively high. Chota Nagpur and Orissa together returned only one case. In the United Provinces, out of 1280 deaths in the week, Mainpuri district reported 167, Muttra 156, Azamgarh 124, and Unao 107. In the whole of the Meerut division only two deaths occurred, both in the Dehra Dun district. Big towns, such as Allahabad, Lucknow, Benares, and Bareilly, reported no cases. In the Punjab, with 2543 deaths, 1458 took place in the Delhi division, 619 of these being in the Gurgaon district. In Rajputana, out of 583 deaths, 273 occurred in Jaipur city and 134 in Alwar State. In the whole of the Rawalpindi division there were only 37 deaths. Compared with the returns of last year the figures are small indeed, and although they are rising there are no signs of large areas being swept by the epidemic. The most disquieting fact, perhaps, is the recrudescence of plague in Bombay city, where so much has been done to stamp out the disease.

Plague in Mysore State.

Dealing with the 1907 report on plague administration in the State during the same year the Mysore Government notes with regret that the plague seizures and deaths in the State numbered nearly double those of the previous year. While the Shimoga and Chitaldrug districts were comparatively free the city of Mysore and the districts of Bangalore, Hasan, and Kadur suffered largely and mainly contributed to the increase. It is observed that no specific reasons for this large increase are given by the sanitary commissioner who only states that in many villages both the people and the officials concerned show a lack of vigilance and promptness of action in dealing with plague preventive measures. But there is abundant reason to believe that in the vast majority of cases individual houses and entire villages have been evacuated on the appearance of plague or even of dead rats, the people camping out in fields and other open spaces in huts constructed by themselves or with the aid of materials supplied by the Government free of charge or at concession rates, and returning to their houses only after these have been lime-washed and cleared and oftentimes disinfected with chemicals. Health camps provided by the Government in large towns have also been availed of. It has often been noticed, however, that when a village is evacuated the inhabitants move only a short distance away from the infected village, as, for instance, across a road. Such evacuation must be quite useless as there is nothing to prevent the rats from traversing the few yards intervening between the temporary sheds and the infected houses. Hence, with a view to evacuation having a reasonable chance of being successful, the sanitary

commissioner has been requested to prescribe a minimum distance to which the villagers should remove.

Importation of Cocaine.

A notification of the Government of India is published which prohibits the bringing by sea or land into British India of cocaine by means of the post, and restricts its importation by any other means to cases in which it is imported by persons or their authorised agents who have been specially permitted to import the drug by a local government or administration or by the Madras Board of Revenue.

Wild Animals in Madras.

During 1907 in the Madras Presidency the number of persons reported to have been killed by wild animals and snakes was 2041, or 197 more than in the previous year. There was a considerable increase in the number of deaths caused by tigers in Vizagapatam, by other animals in Tinnevelli, and by snakes in North Arcot. The number of cattle killed fell by 361. The decreases occurred principally in Malabar and South Canara, while North Arcot and Coimbatore report large increases. The total number of wild beasts for the destruction of which rewards were paid during the year was 797, or 109 less than in the previous year. The amount paid in rewards was Rs.13,698, or Rs.1133 less than in the previous year. Rewards aggregating Rs.2920 were paid for the destruction of 69 tigers. A sum of Rs.13,111 was spent during the year on the removal of noxious undergrowth which harbours snakes, &c.

May 7th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Disposal of Refuse in China.

IN view of the great expense entailed upon sanitary authorities at home in the disposal of refuse by the erection of septic tanks, refuse destructors, &c., it might be interesting to consider the universal system which has been in vogue from prehistoric times in China where such highly specialised procedures are quite unknown. China is essentially an agricultural country and the greater part of the Empire may be looked upon as being one vast sewage farm. Excremental refuse is not in any way regarded as a waste product here; on the contrary, its value is so great that the authorities do not attempt to regulate its disposal in any way, knowing well enough that it is dealt with in a very active manner by the people. Take, for example, this big city of Peking with three-quarters of a million inhabitants. Numbers of people earn a good living by being night-soil collectors. Here and there men build latrines in the streets, from which they collect the deposit of chance pedestrians, while every lane and street is the property of others as far as the house-to-house collection of excreta is concerned. In addition, there are large numbers of itinerant gatherers who perambulate the streets, bucket on back and spade in hand, with keen eyes for any stray deposit from either man or beast. Among the male part of the population the act of defæcation is not regarded as one requiring any privacy and thus it comes that various open spaces in the city are made conveniences of by passers-by. In the streets the night-soil collectors' wheelbarrow loaded to the buckets' brims jostles the mandarin in his carriage or the itinerant purveyor of food. All this refuse is taken to the outskirts of the city, where there are "clearing houses" from which the farmers buy. No fields are ever allowed to lie fallow. Not only that but they are forced by means of this liberal manure dressing to raise two crops of corn a year. In the case of rice the soil is first prepared with manure which is thickly spread over the surface, then by flooding the fields with water a mixture of unsavoury slush is made. Vegetables such as turnips, cabbages, tomatoes, and egg plants are treated in the same way as the cereals. It is to this whole system that the extraordinary fertility of the land is due, but here also lies the cause of the high prevalence of intestinal parasitism. Over 60 per cent. of Chinese harbour one or another of these parasites; so much so that in hospital practice it is generally found that a useful routine is to begin medical treatment by a dose of calomel and santonin. Thus in St. Luke's Hospital, Shanghai, Dr. Eli Day, working in conjunction with Dr. W. H. Jefferys, made an examination of 500 stools mostly from surgical cases with the following result. For the sake of greater accuracy the findings of the first 50 stools were excluded.

—	Single infection.	Mixed infection.	Total cases of infection.	Per-centage.
Ascaris lumbricoides	151	96	247	54·8
Trichocephalus dispar (trichiuris)	22	89	111	24·6
Ankylostoma duodenale	4	21	25	5·5
Distoma sinense ...	2	—	2	0·4
Fasciola hepatica ...	—	2	2	0·4
Strongyloides intestinalis	—	1	1	0·2
Oxyuris vermicularis	1	—	1	0·2
Cases with positive findings	—	—	275	61·1

These examinations were irrespective of symptoms presented and are practically borne out by the results obtained in Hong-Kong public mortuary, where post-mortem examinations are performed on a scale neither attempted nor permitted in any place in China. In Hong-Kong ascaris lumbricoides has been found present in 90 per cent. of the bodies examined, trichocephalus in a fair proportion, and ankylostoma very rarely. Distoma sinense is next to ascaris the commonest parasite, being constantly met with in the bile-ducts and gall-bladder. A feature of note is the absence of cestodes among the Chinese; in fact, they are never met with except among those who indulge in foreign food or have returned from abroad. In my last letter I referred to the rarity of appendicitis among Chinese. Perhaps the similar rarity of cases of tapeworm may be more than a coincidence, as both these affections are present in countries where much and imperfectly cooked beef is eaten. The slice of underdone roast beef so popular at English tables is quite unknown in China. Trichina spiralis is another parasite that may be said to be absent in China, although pork is the commonest kind of meat eaten and the village pigs support themselves mainly by scavenging.

Union Medical College, Peking.

In response mainly to the indefatigable efforts of Dr. T. Cochrane, the principal of this college, the Imperial Government has followed up the Charter which it granted in 1906 by making an annual allowance. This may be looked upon as a more important step than it might at first sight seem, for it means a direct filip to the cause of scientific medicine, especially in this ancient city of Peking. It is the first Government grant given to any medical college under European direction. The teaching is in Chinese and no stone is being left unturned by the British and American staff of lecturers to make it as thorough as possible, though the terminological difficulties are great. This annual grant-in-aid is a concomitant to the Government's action in bestowing a charter, by virtue of which it is to be given facilities for satisfying itself through its own official examiners that graduates have been put in possession of a competent knowledge of their profession. This is therefore really the dawn of the foundation of scientific medicine in China and it behoves medical men at home to watch with interest this endeavour of their British and American *confrères* to establish the profession in a way that has not been done before. Graduates will go forth with Government-stamped diplomas and their work will no doubt be appreciated by a people whose eyes are being daily opened to the ameliorating effects of Western civilisation just as has happened in Japan. A German medical school has recently been opened in Shanghai. At present a beginning has been made in the preliminary scientific work and in the teaching of German as the course will be conducted in that language. The enterprise is said to be well supported. The present members of the scientific staff are Professor du Bois Reymond, Professor Ammann, and Professor Schlinger.

Appointment of Foreign Medical Police Officers at Tientsin.

By sanction of Viceroy Yung Shih-hsiang, the Chief Commissioner of the Chinese city police has engaged foreign practitioners to act as medical advisers to the police, fire brigade, and public works department which up to the present have had no regular medical help. In addition, the Chief

Commissioner has issued orders requiring detailed reports about the sanitary condition of the people and the roads with a view to improve the health of the general public, especially during the coming hot weather. Tientsin is the commercial capital of North China and each of the foreign concessions in it has its own municipality and public health regulations but hitherto nothing in matters sanitary has been done in the densely populated Chinese city.

The Stamping-out of Opium Smoking.

I append a translation of the latest Imperial Edict on the opium habit to enable your readers to see for themselves the active efforts which the Chinese Court and Government are making to suppress a national vice.

IMPERIAL EDICT, 7TH APRIL.

Ching Hsin and Ting Shen-tao are appointed special commissioners in charge of the work of opium suppression. They are required to ascertain whether there are any officials either in Peking or the provinces still smoking opium, and to draw up regulations to deal with officials still guilty of this habit. Her Majesty the Empress Dowager has been informed that there are still some officials breaking the rule, and the Grand Council is hereby authorised to dismiss any official from the rank of Viceroy down who persists in smoking. The two above officials are held responsible in this matter and they are granted taels 30,000 for initial expenses of their work and to open their office, and taels 60,000 annually to maintain it. It is to be kept up until the opium habit is entirely stopped.

April 9th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Climatology of Australia.

Mr. Hunt, the Commonwealth meteorologist, has issued a report dealing with the above subject. Mr. Hunt considers that Australia is, by reason of its insularity and the absence of striking physical features, less subject to extremes of weather than are regions of similar area in other parts of the globe, and that, latitude for latitude, it is more temperate. The hottest area of the continent is situated in the northern parts of West Australia, about the Marble Bar and Nullagine goldfields, where the maximum shade temperature exceeds 100° F. for weeks continuously. The coldest area is in the extreme south-east of New South Wales and extreme east of Victoria, where in the region of the Australian Alps the shade temperature rarely if ever exceeds 100°. The average rainfall of Australian cities affords some surprising comparisons with other great world centres. London has an average 2 inches below that of Melbourne, Edinburgh 1·31 inches less, San Francisco 4 inches less, and Berlin about the same. Amsterdam, Christiania, Copenhagen, Paris, Moscow, St. Petersburg, and Stockholm are all below. The wettest Australian town is Geraldton, on the Queensland coast, where the average rainfall is 145 inches (maximum 211, minimum 69). Lake Eyre district in South Australia has an annual average of only five inches. Mr. Hunt thinks that the Australian "southerly buster" is of like character, and probably derived from similar atmospheric conditions, as the "bora" of Dalmatia, the "mistral" of France and the Gulf of Lyons, and the "pampero" of South America.

Children's Hospital, Sydney.

At the annual meeting of the supporters of the Royal Alexandra Hospital for Children Mr. C. P. B. Clubbe said he regretted that the hospital was not supported as it should be by the public. If the public would not support these institutions there must be a hospital tax imposed. Mr. Dorman, representing the Hospital Saturday Fund, said that the hospital certainly did not receive enough money from the Government. Recently there had sprung into existence a number of institutions calling themselves medical charities which were not fit to bear the name; many institutions which had proved their utility were languishing while funds were being diverted to these others. The public gifts should go through some channel by which they would be properly distributed.

Vital Statistics of Sydney.

During the quarter ended March 31st the metropolitan birth-rate was 6·26 per 1000 of population. The births numbered 3677. There were in the same period 1519 deaths, equal to a rate of 2·76 per 1000. This birth-rate is 7 per cent. and the death-rate is 5 per cent. higher than that of the corresponding period of 1907.

Infectious Diseases Hospital, Melbourne.

In 1891 it was decided to build a hospital for infectious diseases in Melbourne. The project lingered until 1897 when it was finally decided to build in commemoration of the Diamond Jubilee of the late Queen Victoria and to name the institution the Queen's Memorial Hospital. The hospital was largely designed under the supervision of the late Dr. D. A. Gresswell and cost £18,250. Its history up to the time of completion was a series of disputes and dissensions among its promoters and since it was opened about five years ago it has never given complete satisfaction. The design is faulty and only scarlet fever and diphtheria patients are admitted, with the result that there are never more than two-thirds of the beds in use. The management is in the hands of a committee representing the various municipalities which contribute to the up-keep. Patients may be charged in some instances as much as 7*s.* 6*d.* per day. The dissatisfaction with the position and general management of the hospital is likely to be brought forward prominently in connexion with a complaint by the father of a recent inmate that his child was sent home in a dirty state. The hospital authorities deny that there is any ground for the allegation, but Dr. Norris, chairman of the Board of Public Health, wrote to the medical superintendent to the effect that the statements call for a more extended reply. The Inspector of Charities has furnished a report to the Premier in which he stated that the brown appearance of the skin of the child on his discharge was naturally due to open-air treatment but that his head was clean on admission and subsequently required treatment. The report states that "the hospital authorities were undoubtedly to blame in handing the child over to its parents other than in a thoroughly clean condition." The inspector also remarked that while the hospital was doing good work it required to be extended and popularised. At present it was difficult to obtain admission and charges for maintenance were excessive.

Melbourne Hospital.

The trustees of the Wilson Estate, who offered £100,000 towards rebuilding the Melbourne Hospital, practically directed that it should be rebuilt on the present site and the committee has concurred. The trustees have now invited architects to communicate with them in order that they may suggest a name to the hospital committee as they are entitled to do so under the terms of the gift. The gentleman selected must be prepared to spend at least six months in visiting and examining the most modern hospitals in Europe and America.

Diagnosis of Fractured Skull.

Within the space of a few days three cases have come before the Melbourne city coroner in which the deceased person had been found drunk, taken to the lock-up, become seriously ill in the cells, removed to the Melbourne Hospital, and died. In the last case the subject had been seen at the hospital prior to being locked up and refused admission. The coroner has expressed his opinion that the initiation of a State public medical service at night deserved consideration. He produced a copy of a London journal which contended that "the time will come, we hope, when a medical man will be engaged to attend at all police stations in large towns to do duty for a certain number of hours and to diagnose doubtful cases, render skilled aid in cases of accident and sudden attacks of serious illness."

Juvenile Smoking.

At Dimboola, an up-country centre in Victoria, the first case under the new Act for the prevention of juvenile smoking was heard at the local police-court. A lad was summoned for having given a cigarette to a companion who was under the age of 16 years. The lad receiving the cigarette appeared, however, to be over the statutory age and had made a statement to that effect. The case was dismissed but the police magistrate improved the occasion by a severe lecture to the recipient of the gift for having told an untruth as to his age.

Medical Registration in Victoria.

A deputation consisting of members of the Medical Board, the Council of the British Medical Association (Victoria branch), and the Melbourne Medical Association, waited on the Chief Secretary to request an amendment in the present Act relating to medical registration. As the Act at present stands one homœopathic practitioner may be admitted each year in Victoria provided he holds a diploma

from one of two specified American colleges and spends a year subsequent to graduation as resident at the Melbourne Homœopathic Hospital. It was thought at the time that this would insure a five years' training such as is insisted upon for all registrable qualifications, since the American colleges named provided a course extending over four years. It has been discovered that a student who attended some lectures in the University of Melbourne, but passed no examination, proceeded to America and returned in 11 months with an M.D. degree from one of the two institutions named in the Act, and which the Board had no option but to register. Sir Alexander Peacock replied to the deputation that he had been asked to hear the homœopathic view and that he would refer the question to the Cabinet for consideration.

Railway Disaster.

The most appalling railway accident yet experienced in Australia occurred at Braybrook Junction late on Easter Monday night, when a stationary train from Ballarat was overtaken and run into by an express from Bendigo. 41 persons were killed outright and two have since succumbed, while upwards of 70 others were seriously injured and more than 150 minor claims have already been notified. Complaint has been made as to the delay of the railway authorities in affording relief but this does not seem justified. The accident occurred eight miles from Melbourne at an outlying suburban station a few minutes before 11 o'clock at night. Within five hours all the injured persons had received first aid from medical men on the spot and had been forwarded to hospitals in the city. Although the débris was stated to have taken fire none of the casualties appeared to be due to burning.

May 3rd.

Obituary.

FRANCIS RUTHERFURD RUSSELL, M.D., C.M. EDIN., J.P.

BY the death of Dr. Russell, which took place recently at Guildford, that borough has lost one of its most respected and prominent citizens. Born in 1853 at Jedburgh, he received his medical education at Edinburgh and in Vienna. In 1878 he graduated M.B., C.M., at the University of Edinburgh and in 1880 obtained the M.D. degree. In this year he went to Guildford where he soon became popular among all classes of the community. In 1902 he was elected to the Guildford town council and was repeatedly asked to allow himself to be nominated as mayor, but his busy life prevented his consenting to receive the honour which his municipal colleagues were willing to confer upon him. In 1904 Dr. Russell was placed upon the commission of the peace for the borough of Guildford. At one time Dr. Russell was an officer in the 2nd Volunteer Battalion, The Queen's Royal West Surrey Regiment, and later became Brigade-Surgeon-Lieutenant-Colonel to the West Surrey Volunteer Infantry Brigade. He took a keen interest in all that concerned the Volunteers and at the time of his death was one of the military members of the Surrey Territorial Association. He held the Volunteer Officers' Decoration. He was surgeon to the Royal Surrey County Hospital and medical officer to the National Fire Brigades Union. Dr. Russell's unexpected death at the early age of 55 years has been felt with keen sorrow by his professional and lay colleagues no less than by the residents of Guildford and its neighbourhood, both rich and poor.

EXAMINATION FOR WOMEN HEALTH VISITORS AND SCHOOL NURSES.—Hitherto health visitors appointed by local authorities to carry out sanitary inspection and visiting have mostly prepared themselves for their duties by taking the examination for inspectors of nuisances. The council of the Royal Sanitary Institute have now decided to establish an examination for health visitors and school nurses. The syllabus includes general structure of the body, personal hygiene, air, water, food, clothing, the dwelling, elements of home nursing, care of infants and young children, prevention of communicable disease, first-aid, treatment of injuries, ailments and accidents, and statistics. The examinations will be held from June to December in 11 of the large towns in the United Kingdom. The fee is £2 2*s*. Full particulars can be obtained on application to the secretary, Royal Sanitary Institute, Margaret-street, London, W.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The election of a Representative on the General Medical Council, in place of Dr. D. MacAlister, will take place on June 9th in the Senate House from 12 to 1.—The following degrees were conferred on May 28th :—

M.D.—H. M. Davis, W. M. Fletcher, and J. S. Pearson, Trinity; E. D. Macnamara, Pembroke; F. H. Edgeworth, Gonville and Caius; and A. H. Style, Emmanuel.
M.B., B.C.—F. W. W. Griffin, King's.
M.B.—J. McIntyre, King's; and L. H. L. Mackenzie, Trinity.
B.C.—A. Wilkin, King's; P. H. Smith, Pembroke; E. G. Wheat, Christ's; and A. J. May, Sidney Sussex.

THE Medical Golfing Society will hold its 1908 tournament on June 18th at the Guildford Golf Club by kind permission of that club. Intending competitors should send the annual subscription of 4*s*. (which includes entrance to the tournament) to Mr. L. Eliot Creasy, honorary treasurer, Medical Golfing Society, 51, New Cavendish-street, London, W., and must notify their entry, stating lowest handicap, on or before Tuesday, June 16th, to Dr. T. B. Hyslop, honorary general secretary, Bethlem Royal Hospital, London, S.E. The following are the particulars of the competition: 18 holes match play *v.* bogey under handicap. Class 1, handicaps 12 and under; Class 2, handicaps over 12. No previous play allowed on the day. A first and second prize, and a prize for the best last nine holes *v.* bogey will be given in each class. Members of the Guildford Golf Club deduct 2 from their handicap. The "Henry Morris" challenge cup will be awarded for the best score against bogey under handicap and the winner will also receive the Medical Golfing Society gold medal. A foursome sweepstake will be arranged in the afternoon.

ROYAL SANITARY INSTITUTE, LONDON.—A sessional meeting of the institute will be held at the Parkes Museum on Saturday, June 13th, at 11 A.M., when a discussion will take place on "The Pasteurisation of Milk," to be opened by Professor H. R. Kenwood. In the afternoon a visit will be made to the Sudbury Park Dairy Farm (Wembley) and the Walker-Gordon Laboratories, by invitation of Mr. and Mrs. Titus Barham, who are entertaining the members at a garden party. Particulars of trains and arrangements are given on the invitation cards or can be obtained by applying to the institute. On Saturday, June 20th, a provisional sessional meeting will be held at St. Mary's Hall, Coventry, when a discussion will take place at 11 A.M. on "Some Aspects of the Housing Problem and Town Planning," which will be opened by Dr. E. H. Snell, medical officer of health, and Mr. J. E. Swindlehirst, city engineer, of Coventry. Tickets for admission of visitors may be had on application to Dr. Snell, public health department, 10A, Hay-lane, Coventry, who is acting as the local honorary secretary of the meeting, or they may be obtained from Mr. E. White Wallis, the secretary of the Institute, at the Parkes Museum, Margaret-street, London, W.

GLASGOW UNIVERSITY CLUB, LONDON.—The members and friends of this club dined together on May 29th at the Empire Rooms, Trocadéro Restaurant, London, W. Professor David W. Finlay was in the chair, and in the course of his speech proposing "The University and the Club" he referred to the sad loss which they had all suffered in the death of Lord Kelvin, whose office as president of the club had been filled by Lord Lister. He announced with satisfaction that the club had been surely and steadily progressing and owing to the energy and capacity of Dr. C. O. Hawthorne it now numbered nearly 400 members. He regretted that Dr. Hawthorne, after seven years' service as honorary secretary, had tendered his resignation which had been accepted with reluctance in a resolution putting on record the high appreciation of all concerned of the worth of the services which Dr. Hawthorne had rendered to the club. Sir Henry Craik, M.P., submitted the toast of "The Visitors," coupling with it the name of Dr. Sidney Coupland, who acknowledged the compliment in a few well-chosen words. Professor John M. Thomson gave the toast of "The Chairman," to which that gentleman made a suitable response, and the proceedings terminated. An interesting item in the annual report was the gift of 50 guineas by the club to the Glasgow University Students' Union Extension Fund.

UNIVERSITY OF MANCHESTER.—Three lectures on Cancer (Pilkington Cancer Research) will be delivered by Dr. C. Powell White on Wednesdays, June 17th, 24th, and July 1st, at 4.30 P.M., in the general theatre of the medical school. The lectures will be fully illustrated by means of microscopic preparations, museum specimens, and lantern slides projected by the epidiascope. Members of the medical profession and students of medicine are cordially invited to attend.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—H.R.H. Princess Alexander of Teck will open the extension of the Nurses' Home of Queen Charlotte's Hospital on Tuesday, June 30th. The original home, which was opened in 1899, provided for nearly 70 nurses and the extension will accommodate an additional 35. The new building also comprises a residential college for students, with accommodation for 16 students and qualified practitioners. A sum of £10,000 is still needed to open the extension free of debt, and donations towards this amount are earnestly asked for.

THE annual meeting of the South Wales and Monmouthshire branch of the British Dental Association was held at Merthyr Tydil on May 22nd. Mr. E. Hugh Musgrove, L.D.S. Eng., the President, in the course of his address alluded to the beneficial results which would arise from the medical inspection of children in elementary schools and complimented the Merthyr Tydvil corporation upon putting the Act enforcing this inspection into force so thoroughly. Some interesting demonstrations were given by Mr. J. C. Oliver, L.D.S. Eng., Mr. J. T. Willows, L.D.S. Irel., and others. The dinner took place in the evening, Mr. Musgrove presiding.

UNIVERSITY OF OXFORD.—Mr. A. F. Hertz, D.M., Magdalen College, assistant physician, Guy's Hospital, has been appointed lecturer in materia medica and medical pharmacology for the year beginning with the first day of Easter term, 1908.—Mr. J. B. Leathes, B.M., New College, lecturer in physiology, St. Thomas's Hospital, has been appointed a public examiner in animal physiology, to hold office from the first day of the Michaelmas term, 1908, to the first day of Michaelmas term, 1910.—The examination in materia medica and pharmacy has been transferred from the first to the second examination for the degree of Bachelor of Medicine and the subject will in future be entitled "Materia Medica and Pharmacology."—The annual dinner of the past and present members of the medical school will be held in University College on Saturday, June 20th. It is intended that this year the meeting shall take the form of a farewell dinner to Dr. Gustav Mann who is leaving Oxford to enter on his new duties as professor of physiology at New Orleans, U.S.A. The secretary of the dinner is Mr. C. F. Beevor, Magdalen College.

THE WELSH MEDICAL DINNER.—The Welsh Medical Society held its fifth annual dinner at the Criterion Restaurant on May 29th, Mr. Edmund Owen, the President, being in the chair. After the honouring of the loyal toasts, the chairman paid an eloquent tribute to the qualities of the Principality in giving the toast of "The Medical Profession and the University of Wales." Mr. Owen, amidst applause, in the course of his speech, announced his own nomination as the representative of the British Medical Association on the Medical Board of the University of Wales. In speaking of the solidarity of his native land he alluded to the united front with which the whole medical profession had supported two of his compatriots, Mr. Lynn Thomas and Mr. H. E. Skyrme, in their recent time of trouble. Dr. Emrys Jones replied to the toast, followed by Mr. Lynn Thomas, who in response to an urgent call thanked the profession in very feeling terms for the support which had been tendered to himself and his colleague. Dr. Lloyd Owen proposed "The Guests," for whom Dr. Ambrose responded, the last toast being "The Chairman," which was given by Mr. J. H. Morgan and drunk with musical honours. As was to be expected at a Welsh gathering, a programme of most admirably rendered vocal music contributed to the success of the evening, the artists being Miss Edith Evans, Miss Gwladys Roberts, and Mr. John Roberts, accompanied by Mr. E. T. Davies, F.R.C.O.; the songs included the Welsh anthem, "Fy Anwyl Hen Wlad," and "Galwad y Tywysog," and at the demand of the chairman, supported by the company, an addition was made to the official programme by Dr. Frederick Roberts who sang "The Anchor's Weighed" with all the sweetness and vigour which his friends know so well, to the great delight of the gathering. At the annual meeting of the society which preceded the dinner Dr. Lloyd Owen of Birmingham was elected President, Mr. Howell Evans honorary secretary, and Mr. D. L. Thomas honorary treasurer for the ensuing year. It is hoped that as the great National Eisteddfod will be held in London in 1909 the Welsh medical gathering will be the largest which has yet assembled.

THE LLANELLY HOSPITAL.—The annual meeting of the subscribers to the Llanelly Hospital was held on May 29th. The medical report was satisfactory and the financial statement showed that the institution had a favourable balance. The contributions from working men amounted to £811, and this was supplemented by £239 from the employers. The annual fête which was held last year realised £288.

WEST LONDON POST-GRADUATE COLLEGE.—The annual dinner of the Post-Graduate College and past and present members of the West London Hospital will take place at the Trocadéro Restaurant, Piccadilly Circus, W., on Tuesday, June 23rd, at 7.30 P.M. The price of the dinner ticket is 7*s.* 6*d.* (exclusive of wine), and those desirous of attending can obtain tickets for themselves or their friends by applying to Mr. Aslett Baldwin, 6, Manchester-square, London, W., the honorary secretary of the dinner. The chair will be occupied by Mr. L. A. Bidwell, surgeon to the hospital and dean of the Post-Graduate College.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—The summer dinner of the southern branch of this association was held on May 29th at the Imperial Restaurant, Regent-street, London, W., when 45 members and guests were present. The President of the association, Dr. Charles W. Chapman, occupied the chair. The toast of "The University" was proposed by the Rev. George Hilton, and acknowledged by Professor Sir George Hare Philipson; and that of "The Visitors" was responded to by Mr. R. A. Robinson, chairman of the London County Council, in a delightful speech. Excellent music contributed in no small degree to the success of a very pleasant evening.

IMPROVEMENTS IN ROME.—Mr. C. C. Morgan, the British Consul, in his annual report, just received at the Foreign Office, states that the Royal Commission appointed some time ago to study and to report upon the important question of river communication between Rome and the sea has now adopted the scheme for dredging the Tiber to a depth sufficient to allow ordinary steamers to approach Rome. Sanction has been obtained for constructing a railway line from Rome to the sea-coast, but this is not intended so much to facilitate the conveyance of goods as to provide the inhabitants with the speedy means of getting to the seaside, especially during the summer months. The proposed railway will open a hitherto abandoned tract of land and will probably encourage speculators to build a small town on the coast as a summer resort. According to the general census of 1901 the resident and fluctuating population of the Province of Rome amounted to 1,196,909 inhabitants, as against 836,764 in 1871, an increase in round figures of 360,000 within 30 years. The latest calculation in January of last year showed a total of 1,278,000, the largest increase being in the city itself, to which newcomers are constantly attracted, an unmistakeable symptom of the progressive character of the Italian capital. The number of births of British subjects in Rome in 1907 was 4 (1 girl and 3 boys) and of deaths 28 (15 females and 13 males). The need of an Anglo-American club where visitors might congregate and find all necessary comforts and facilities having been realised, a committee of British and American gentlemen have raised among themselves the necessary funds to start one in Rome and it is to be inaugurated in the autumn. A suitable apartment has been already rented in the Piazza di Spagna, a favoured locality in the heart of the town. The sanitary conditions of Rome continue to improve and its death-rate (21·2 per 1000) compares most favourably with some of the other Italian towns. Malaria is no longer the scourge of the Italian capital and the few cases recorded in the hospital returns are imported from the country, where every possible effort is being made to stamp it out by prophylactic means and by extensive use of wire nettings applied to doors and windows so as to prevent mosquitoes from entering the houses. Quinine is also being freely distributed where most

needed, and a squad of competent medical men travel across the "Campagna" during the summer months fighting a regular crusade against mosquitoes and malaria.

Dr. Donald W. C. Hood, C.V.O., has been nominated as a vice-president of the Royal Institution.

ASSOCIATION OF SCOTTISH MEDICAL DIPLOMATES.—The annual dinner of this association was held on May 26th at the Waldorf Hotel, Aldwych, London. The chair was occupied by Dr. David Walsh who, in proposing "The Association," said that it was formed to promote the general and professional interests of the Scottish diplomates. The association was now four years old and there was opening to it a great field of usefulness. The association attracted its members from all sections of the profession and rendered articulate the aspirations of the Scottish medical diplomates. Mr. J. G. Fitzgerald replied to the toast and Mr. Sydney Stephenson proposed "The Visitors" in an amusing speech, which was acknowledged by Dr. L. S. McManus and Dr. H. Macnaughton-Jones. Dr. McManus in the course of his remarks said that in his experience as a Direct Representative on the General Medical Council never before in the annals of that body had their Direct Representatives been more courteously received nor their wishes more thoroughly considered than at the present time. He believed that the General Medical Council was about to take a very important step towards setting its house in order and accepting the position of standing between the medical profession and the gross quackery that was rampant in the land. The toast of "The Council and Officers" was intrusted to Mr. P. H. Parsons and was replied to by Mr. Skene Keith. The evening concluded with a speech from Dr. H. W. Fitzgerald Powell proposing "The Ladies."

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Irish Universities Bill.

THE progress of the Irish Universities Bill before one of the Standing Committees of the House of Commons is slow. It has not commended itself to several Unionist Members from Ulster and they have sought to have it amended in a direction more in harmony with their views. The fears which they have expressed are concerned with ecclesiastical considerations but so far they have not carried their points. On May 27th Mr. CHARLES CRAIG proposed a constitution for the new Dublin College which would give a place on the governing body to two representatives of the Royal College of Surgeons in Ireland and to two representatives of the Royal College of Physicians of Ireland in addition to various other representatives. However, the proposal was rejected by a large majority.

Juvenile Smoking.

The portion of the Children Bill dealing with juvenile smoking has now passed through the Standing Committee of the House of Commons Before the subject was exhausted Mr. LEIF JONES drew the attention of the committee to smoking mixtures containing no nicotine which were sold. On analysis they were found to contain an irritant which after persistent smoking would cause throat trouble. Mr. H. SAMUEL, who is in charge of the Bill, shared the apprehensions of Mr. LEIF JONES that dangers would ensue if these substances were ignored by the Bill. Ultimately the provisions of the Bill were extended so as to safeguard young persons from using them.

HOUSE OF COMMONS.

WEDNESDAY, MAY 27TH.

Whole-time Medical Officers of Health.

Mr. BRODIE asked the President of the Local Government Board to state how many whole-time medical officers of health there were in England and Wales, exclusive of London, and how many of this number came up for periodical reappointment, and whether the Board was prepared to recommend the electing authorities of those who were re-elected periodically to appoint them without reference to time.—Mr. BURNS (by written answer) replied: I can only give the information desired as regards cases in which the appointment is sanctioned by the Local Government Board, and thus it does not extend to medical officers of health appointed for counties or for the majority of county boroughs. There are 104 medical officers of health for districts outside London who give their whole time to the duties of that office either by itself or in conjunction with some other appointment of a public character. Of this number 75 are subject to periodic reappointment. The officers referred to include those who act for more than one district. The total number of districts for which they act is 345. The question of the tenure of office of these officers is receiving my attention, but I may state that in suitable cases it is already the practice of the Local Government Board to recommend local authorities to appoint their medical officer of health permanently or for a lengthened period.

The Pollution of the Ballybritt.

Mr. REDDY asked the Chief Secretary to the Lord Lieutenant of Ireland to say whether the Local Government Board had received representations protesting against the pollution of the River Ballybritt in county Tipperary; whether he was aware that a large population in this district were solely dependent for their water-supply for domestic purposes on this river; and in view of the danger to the health of the people residing in this district and the damage already done to the fish in the river, whether steps would be at once taken fully to enforce the provisions of the Public Health (Ireland) Acts against the persons who were causing this nuisance and danger to their neighbours.—Mr. BIRRELL furnished the following reply: The Local Government Board has received complaints to the effect stated, and the local medical officer of health has reported that a number of families are dependent for water on the river in question. It appears that the pollution of the river arises from sheep dipping, and the Board has been advised that pollution of this character is not covered by any of the Acts under which the sanitary authority can proceed. It is, however, open to the persons concerned to take legal proceedings for their own protection.

Ireland and the Poisons and Pharmacy Bill.

Sir THOMAS ESMONDE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the Poisons and Pharmacy Bill did not apply to Ireland; whether he was aware that this Bill gave power to county councils in England and Scotland to issue licences to traders other than chemists to sell such articles as sheep dips, weed killers, and other poisonous substances commonly used by farmers; and whether he would see that the Bill was extended to Ireland, in view of the fact that the necessity for relaxation of the restrictions imposed by the Act of 1868 was far greater in Ireland than in Great Britain.—Mr. T. W. RUSSELL (who replied) wrote: The joint committee has at my instance inserted a clause for the application of this Bill to Ireland.

Tuberculosis in Ireland.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state if the recent campaign against tuberculosis in Ireland had resulted in the diminution of that disease, and, if so, to what extent; whether any, and how many, of the local authorities had undertaken organised action to combat the disease; and whether the Government proposed to introduce legislation on the subject embodying the recommendations of the leading Irish medical specialists as to the best means of prevention and cure of the disease.—Mr. BIRRELL gave the following written answer: It is too soon to form an estimate of the results accruing from the measures recently taken with a view to the prevention of tuberculosis. All the sanitary authorities in the county of Cork, some of those in county Dublin, and the Belfast corporation and board of guardians have already taken steps for the provision of sanatorium accommodation, and there is reason to believe that many other counties and cities are merely awaiting the promised legislation before taking similar steps. The measure to be introduced by the Government will embody the principles which are recognised to be the most effective that can be taken by local authorities for the prevention and cure of the disease.

THURSDAY, MAY 28TH.

Importations of Fresh Milk.

Answering Mr. BRIGG, Mr. CHURCHILL (President of the Board of Trade) said: In January, 1908, the average quantity of fresh milk imported daily into England was 150 gallons, in February 150 gallons, and in March 48 gallons. There were no importations in April or in May to date. The whole of this milk was imported at Southampton.

Overcrowding in Oldham.

Mr. CLYNES asked the President of the Local Government Board whether his attention had been drawn to a report presented to the last meeting of the Oldham Trades and Labour Council showing that, largely on account of extensive mill building in recent years, there was a great scarcity of suitable dwelling-houses for the working classes in the Oldham district, and alleging that more than 10,000 persons lived in a condition of overcrowding, and that many insanitary evils and a higher rate of infantile mortality had thereby resulted; and whether he could take action to press upon the local authorities of the district the necessity of immediately exercising municipal powers at present unused to insure a better supply of suitable houses and the erection of other premises on more methodical and improved lines.—Mr. BURNS answered: I have seen a newspaper account of a meeting of the Oldham Trades and Labour Council held within the last few days at which the report mentioned was read. I do not gather whether the report has been sent to the town council of the borough, but if not this should be done at once. I will communicate with it on the subject to which it relates. I may add that if the Housing, Town Planning, &c., Bill now before Parliament becomes law, Part III. of the Housing of the Working Classes Act, 1890, which enables local authorities to provide houses and at present is only adoptive, will be put in force throughout the country and a statutory complaint can be made to the Local Government Board if the local authorities fail to exercise their powers under that part in cases where they ought to have been exercised and the Board would then be empowered to take action.

The Report of the Belfast Health Commission.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he had any power to compel the Belfast corporation to print and publish a sufficient number of copies of the Belfast Health Commission report to meet the public demand for the same; and if so, whether he would exercise that power in view of the complaints from all quarters as to the impossibility of obtaining copies of the report; and whether, in the meantime, he would order that a copy of the report be laid upon the table of the House.—Mr. BIRRELL replied: 250 copies of the report in question were printed at the expense of the Belfast corporation and of these the Local Government Board had 150, nearly all of which have been distributed amongst public bodies and interested persons. The corporation has declined to incur the expense of printing additional copies and I have no power to compel it to do so. As, however, the report is of general interest from the point of view of the public health I will lay it on the table at an early date.

The Public Abattoir in Belfast.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the public abattoir in Belfast was

a standing menace to the health of the city; that nine years ago a new abattoir was proposed and a loan of £30,000 for its construction sanctioned by the Local Government Board; but that, notwithstanding this, the corporation had not yet decided upon a site for the new abattoir; and whether, in view of these circumstances, the Local Government Board proposed to take any action in the matter.—Mr. BIRRELL furnished the following written reply: The Belfast Health Commission has reported unfavourably upon the situation of the abattoir and the insufficiency of its accommodation. A loan for a new abattoir was sanctioned nine years ago, but up to the present the corporation has not decided upon a site. The matter is one within the discretion of the corporation and the Local Government Board has no power to compel it to provide a proper abattoir; but it may, perhaps, be anticipated that the recommendation of the Commission will induce the corporation to take action in the matter.

MONDAY, JUNE 1ST.

Ruchill Fever Hospital.

Mr. WATT asked the Secretary for Scotland whether the resident medical officers at Ruchill Fever Hospital, Glasgow, had been dismissed because they drew the attention of the Local Government Board to evils which had been fully substantiated on public inquiry; and, if so, whether he would say what steps he proposed to take in the matter.—Mr. SINCLAIR replied: The resident medical officers at Ruchill Hospital were not dismissed because they drew the attention of the Local Government Board to the evils referred to. The dismissals were agreed upon by the sub-committee on hospitals on the grounds stated in its minute of Jan. 13th. I have no power to interfere with the discretion of the local authority.

Mr. WATT asked the Secretary for Scotland whether nurses had been dismissed and threatened with dismissal from Ruchill Hospital, Glasgow, on account of their having given evidence before the Local Government Commissioners; and, if so, whether he would, in view of the public necessity that those with knowledge of the facts be not in future intimidated from giving evidence in such cases, call the attention of those under his department to the unwisdom of such action.—Mr. SINCLAIR answered: I am not aware that nurses have been dismissed and threatened with dismissal from Ruchill Hospital on account of their having given evidence before the Commissioners but I am making inquiries.

Mr. WATT further asked whether the Commissioners of the Local Government Board who inquired into the charges of mismanagement at Ruchill, Glasgow, found that the resident medical officers were in no way to blame for what occurred; whether, notwithstanding this finding, these officers had been dismissed; and, if so, whether he would take steps to recommend their reinstatement.—Mr. SINCLAIR replied: The Commissioners did not find that the resident medical officers were responsible for the irregularities that formed the subject of inquiry; they were not dismissed on account of these irregularities but on other grounds; and, as already stated in reply to a previous question, I have no power to interfere with the discretion of the local authority in the matter of their dismissal.

Mr. WATT further asked the right honourable gentleman with reference to the public inquiry by his department into the charges of overcrowding and mismanagement in Ruchill Fever Hospital, Glasgow, whether it was the duty of the Commissioners appointed for this inquiry, in finding the charges well founded, to apportion the blame among the officials responsible; if so, whom did the Commissioners find responsible; and what had been done by the Local Government Board with regard to these officials to prevent a recurrence of the evil.—Mr. SINCLAIR furnished the following answer: The Local Government Board's remit to the Commissioners was "to inquire and report to them upon the complaints of overcrowding and understaffing of Ruchill Fever Hospital and on the administration and management of the hospital." The conclusions of the Commissioners will be found in their report, which has been issued as a Stationery Office paper. The main responsibility was declared to rest on the medical superintendent, but as regards overcrowding it was shared to some extent by the medical officer of health and, as regards understaffing, by the matron. The report was sent to the local authority which has now dealt with the officials responsible.

Mr. WATT asked the Secretary for Scotland whether his attention had been called to the fact that on some days in December, 1907, there were over 800 patients in Ruchill Fever Hospital, Glasgow, although the authorised maximum allowed is only 440; whether his department had traced who brought about this overcrowding; and what arrangement had it made to see that the statutory duty of the local authority to make provision for all cases of infectious diseases was carried out without giving rise to excessive overcrowding. Mr. SINCLAIR replied: The report of the Commissioners appointed by the Local Government Board shows that on certain days there were over 800 patients in Ruchill Hospital. The majority of the patients were children and the authorised number allowed is 440 adults. The responsibility for the overcrowding is dealt with in the preceding question. It lies with the local authority to make provision for such cases and to exercise all reasonable prevision in the matter.

TUESDAY, JUNE 2ND.

Cancer Research.

Captain FABER asked the Prime Minister whether, with reference to the meeting held in Berlin on May 23rd with the object of founding an international association for the prosecution of cancer research, he would promise the assistance of this country in that direction.—Mr. ASQUITH answered: No, sir; as at present advised I am not disposed to give such a promise as the honourable member suggests. The Imperial Cancer Research Fund, which is supported by Government, is doing all it can in the encouragement of individual intercourse and exchange of material between investigators of different countries.

WEDNESDAY, JUNE 3RD.

Medical Referees.

Mr. HILLS asked the Secretary of State for the Home Department how many medical referees were appointed under the Workmen's Compensation Act prior to the Act of 1907 coming into force; how many references were referred to each such referee; how many times the county court judges had asked such medical referees to act as assessors with them or called them in to advise them as to their judgments; and had the Channel Islands, and Guernsey in particular, refused to adopt the Act.—Mr. GLADSTONE furnished the following written reply: If I understand the first part of the honourable Member's inquiry rightly, he desires to know how many medical referees have been appointed for the purposes of the Workmen's Compensation Act, 1906. The number is 343. The total number of references made to referees in the nine months from July 1st, 1907, the date on which the Act of 1906 came into force, up to March 31st last, the latest date for which figures are available, is 189. Of these references 12 were made under Section 8 of the Act, 28 under paragraph (15) of Schedule I., and 149 under paragraph (15) of Schedule II. The number of cases during the same period in which referees have been summoned to sit as assessors is 35. The States of both Jersey and Guernsey have deliberated on the question of enacting legislation for the islands on the lines of our Act of 1906, but in both cases the proposal was rejected.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALEXANDER, F. J., M.B., C.M. Aberd., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

BERKELEY, COMYNS, M.B., B.C. Cantab., has been appointed Obstetric Physician to the Middlesex Hospital.

BONNEY, W. F. VICTOR, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Assistant Obstetric Physician to the Middlesex Hospital.

CAMPBELL, JANET M., M.D., B.S. Lond., has been appointed a Member of the Medical Department of the Board of Education.

FAIRCLOUGH, W. A., M.B., Ch.B. New Zeal., M.R.C.S., L.R.C.P., has been appointed House Physician at the Evelina Hospital for Sick Children, Southwark, S.E.

FARQUHARSON, DAVID A., M.B., C.M., F.F.P.S. Glasg., has been appointed to the Chair of Physiology in the Royal (Dick) Veterinary College, Edinburgh.

GARDINER, PETER, M.D., C.M. Glasg., D.P.H. Lond., has been appointed Medical Officer to the Camborne (Cornwall) Nursing Association.

GLENDINNING, B., M.B., B.S. Durh., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

HANNIGAN, T. H., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Drumcollogher District of the county of Limerick, Ireland.

HAWKER, GEORGE POOLE DAVID, M.B., B.C. Cantab., has been appointed Medical Officer to the Exeter Dispensary.

HOLLAND, EARDLEY LANCELOT, M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond., has been appointed Assistant Physician to the City of London Lying-in Hospital.

JONES, F. EMRYS, L.M.S.S.A., has been appointed Resident Pathologist at the Birmingham General Hospital.

LEIGHTON, G. R., M.D. Edin., F.R.S.E., has been appointed Professor of Pathology and Bacteriology at the Royal (Dick) Veterinary College, Edinburgh.

LLOYD, DAVID GEORGE, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Newcastle-Emlyn Workhouse, Medical Officer and Public Vaccinator for the Cenarth District by the Newcastle-Emlyn (Carmarthenshire) Board of Guardians, and Medical Officer of Health by the Newcastle-Emlyn Rural District Council.

MONTESOLE, M. HERSCHEL, L.R.C.P. Lond., M.R.C.S., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

RAMSAY, JEFFREY, M.B., B.S. Lond., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Infirmary.

RENTON, JOHN W., M.B., Ch.B. Glasg., has been appointed Anæsthetist to the Western Infirmary, Glasgow.

ROBERTS, W. EDGAR, M.R.C.S., L.R.C.P., has been appointed Junior House Surgeon at the Macclesfield General Infirmary.

ROWNTREE, S. J., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

STEWART, A. H., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Queensbury District of the county of York.

THOMAS, JOSIAH TELFER, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Camborne (Cornwall) Nursing Association.

TONKING, JOHN HERBERT, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Camborne (Cornwall) Nursing Association.

WALKER, CYRIL H., M.B. Cantab., F.R.C.S. Eng., has been appointed Additional Lecturer on Ophthalmology in the Faculty of Medicine of University College, Bristol.

WILLETT, J. ABERNETHY, M.D. Oxon., M.R.C.P. Lond., M.R.C.S., has been appointed Assistant Physician to the City of London Lying-in Hospital.

WOODS, F. W., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Birr District of King's County, Ireland.

WRIGHT, J. A., M.D. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

YEARSLEY, MACLEOD, F.R.C.S. Eng., has been appointed Lecturer on Anatomy and Physiology to the Ealing Training College for Teachers of the Deaf.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALTON, HANTS, LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.—Resident Medical Officer. Salary £150 per annum.

AYLESBURY, BUCKS COUNTY LUNATIC ASYLUM, Stone.—Senior Assistant Medical Officer. Salary £175 per annum, with board and apartments.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and laundry.

BEXLEY, KENT, LONDON COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House Surgeon for six months. Salary £50 per annum, with board, rooms, and attendance.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 per annum, with rooms, board, coals, and light free.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £100 per annum, with board, washing, apartments, &c.

CHELTENHAM EDUCATION COMMITTEE.—Two Medical Inspectors of School Children. Salary £100 each per annum.

CHESTER, CITY OF.—Assistant Medical Officer of Health. Salary £250 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £50 per annum, with board, washing, and residence.

CITY OF LONDON LYING IN HOSPITAL, City-road, E.C.—Honorary General Physician.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon tor six months. Salary at rate of £60 per annum, with rooms, board washing, and attendance.

CREWE, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum, rising to £500.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and lodging.

FULHAM INFIRMARY, St. Dunstan's-road, Hammersmith, W.—Second Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, apartments, and washing. Also Locum Tenens for two months. Salary at rate of £4 4s. per week, with board, apartments, and washing.

HAMPSTEAD GENERAL HOSPITAL AND NORTH-WEST LONDON HOSPITAL.—House Physician for six months. Salary at rate of £70 per annum, with board and residence.

INDIA, LUDHIANA, PUNJAB.—Two Physicians (females).

INDIAN MEDICAL SERVICE.—Examination for 20 Commissions.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

LEICESTER INFIRMARY.—Assistant House Physician. Salary at rate of £50 per annum, with board, apartments, and washing.

LICHFIELD, COUNTY ASYLUM, Burntwood.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, attendance, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL INFIRMARY FOR CHILDREN.—House Surgeon. Salary £100 per annum, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Honorary Ophthalmic Surgeon. Also Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

LIVERPOOL, UNIVERSITY OF.—Chair of Therapeutics.

LONDON COUNTY COUNCIL.—Inspector under the Midwives Act, 1902 (female). Salary £175, rising to £300 per annum.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, washing, &c.

MANCHESTER EYE AND EAR HOSPITAL, 25, St. John-street, Deansgate.—Medical Officers for the Examination of School Children. Also Clinical Assistants.

MANCHESTER ROYAL INFIRMARY, CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for five months. Salary at rate of £80 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Resident Surgical Officer. Salary £100 per annum, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Surgeon for Diseases of Women.

MILLER GENERAL HOSPITAL, Greenwich-road, S.E.—Physician to In-Patients. Also Surgeon to In-Patients. Also Junior House Surgeon for six months. Salary at rate of £80 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Third Resident Medical Officer. Salary £60 per annum, with board, residence, and laundry.

NORTHAMPTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £200 per annum, rising to £250.

NORWICH CITY ASYLUM, Hellesden-next-Norwich.—Assistant Medical Officer, unmarried. Salary £150, rising to £180 per annum, with rooms, board, and attendance.

OLDHAM, COUNTY BOROUGH OF.—Assistant Schools Medical Officer. Salary £200 per annum, rising to £260.

POPLAR AND STEPNEY SICK ASYLUM, Bromley, E.—Second Assistant Medical Officer. Salary £100 per annum, with rations, apartments, and washing.

PORTSMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150, rising to £200 per annum, with board, lodging, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Junior House Physician. Salary £40 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

RANGOON MUNICIPALITY.—Health Officer. Salary Rs.1000, rising to Rs.1500 per mensem.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Junior Obstetric Assistant for six months. Board, lodging, and laundry provided. Also Clinical Assistants, all females.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Casualty House Surgeon. Also Resident Assistant Anæsthetist. Both for six months. Salary in each case at rate of £100 per annum, with board and residence.

SALFORD, COUNTY BOROUGH OF, EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £350 per annum, rising to £500.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £60 per annum, with board and apartments.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

SYRIA, LEBANON HOSPITAL FOR THE INSANE, Asfuriyeh.—Medical Superintendent. Salary £300 per annum and house.

WARWICKSHIRE COUNTY COUNCIL.—Two Medical Inspectors of Elementary School Children. Salary in each case £250 per annum.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident Medical Officer for six months, renewable. Salary at rate of 50 guineas per annum, with residence, board, washing, and attendance.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants, also Casualty Officers.

WESTERN AUSTRALIA, HOSPITAL FOR THE INSANE.—Senior Assistant Medical Officer, unmarried. Salary £380, rising to £405 per annum, with board, lodging, washing, fuel, and light. Also Junior Assistant Medical Officer. Salary £285, rising to £315 per annum, with board, lodging, washing, fuel, and light.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and laundry. Also House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Downham Market, in the county of Norfolk.

Births, Marriages, and Deaths.

BIRTHS.

BARRADELL-SMITH.—On May 24th, at London-road, South Lowestoft, the wife of S. Barradell-Smith, M.B., B.C., of a son.

BAWTREE.—On May 27th, at the Lodge, Malden, Essex, the wife of Frank Bawtree, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

BEALE.—On May 31st, the wife of Hanway Beale, M.D. Lond., of Retford, of a daughter.

WILSON.—On May 22nd, at Chevening-road, London, N.W., the wife of Thomas Wilson, F.R.C.S., of a son.

DEATHS.

NUNES.—On June 1st, at Llandrindod Wells, Herbert FitzStephen Nunes, L.R.C.P., M.R.C.S., in his 42nd year.

OVERTON.—On May 31st, suddenly, at Bradford-road North, Huddersfield, Arthur Overton, M.R.C.S., L.R.C.P., aged 46 years.

PURVIS.—On May 29th, at Lansdowne-place, Blackheath, Prior Purvis, M.D. Lond., aged 96 years.

RICHARDS.—On May 29th, at his residence, 150, West Hill, Putney, S.W., Samuel Atkinson Richards, L.R.C.P., M.R.C.S., L.S.A., in his 76th year. Interred in Norwood Cemetery.

RIDGE.—On May 25th, at Carlton House, Enfield, Middlesex, John James Ridge, M.D. and M.D. (State Medicine), B.A., B.S., B.Sc. Lond., aged 61 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

WAKLEY *v.* MACAURA.

On May 5th last the proprietors of this journal commenced an action against Mr. G. J. Macaura for damages sustained by them in their business as proprietors and publishers of THE LANCET by reason of the use of the name of THE LANCET without their authority and by reason of the publication by Mr. Macaura of (*a*) a poster headed "The Steel Doctor," posted on or about March 24th, 1908, on a hoarding at the corner of Edmund-street and Broad-street, Birmingham, and elsewhere in Birmingham; (*b*) a publication called "Dr. Macaura's Health Record," published on or about March 24th, 1908, in Birmingham; (*c*) a pamphlet called "The Book of Health" published on or about March 24th, 1908, in Birmingham; (*d*) two leaflets issued with the said "Book of Health," which documents contained (*inter alia*) extracts from a reference made in this journal to a certain massaging machine. There was also a claim in the alternative to the above for damages for libels contained in the said poster, publication, pamphlet, and leaflets. In addition to the above an injunction was claimed to restrain Mr. Macaura, his agents, and servants from further writing, printing, circulating, distributing, or otherwise publishing the said poster, publication, pamphlet, and leaflets or any of them and from using the name of THE LANCET without the authority of the proprietors of this journal, and from further writing, printing, circulating, distributing, or otherwise publishing the said libels or any further or other libels affecting their business as proprietors of THE LANCET.

On May 8th last, before Mr. Justice Ridley in King's Bench Judges' Chambers, Mr. Macaura by his counsel undertook that until the trial of the action he would not make use of the name of THE LANCET, and this undertaking has since by consent been made perpetual. In these circumstances the proprietors of this journal have decided not to proceed any further in the matter.

A HOSPITAL EXONERATED.

THE rules and regulations of the Royal Mineral Water Hospital at Bath have been inquired into by a coroner's jury at West Lavington in Sussex: An old man named Edmund Ellcombe, aged 72 years, had been in the hospital for the special treatment provided there. By his own request, and without making any complaint whatsoever, Ellcombe was allowed to leave the institution before the course of baths had been completed and on a day other than that specified by the rules of the institution. On the journey home, a journey necessitating many changes of trains and delays at stations, Ellcombe contracted double pneumonia, and, to his friends, complained of the treatment which he received at Bath. However, after two lengthy sittings and having heard the resident medical officer and the head nurse from Bath the jury, on May 19th, exonerated the Royal Mineral Water Hospital.

A REMARKABLE SPECIMEN.

To the Editor of THE LANCET.

SIR,—An interesting and remarkable specimen, unfortunately now too dried to be preservable, has just been presented to me by patients of mine at Boreham Wood. On breaking a hen's egg obtained from Bullbaiters Farm there they found within it a tape-worm. The worm is complete and measures about two inches in length.

I am, Sir, yours faithfully,

Hendon, May 26th, 1908. HENRY BAZETT.

THE THERAPEUTIC APPLICATIONS OF BETA-NAPHTHOL.

IN a recent number of the *Bulletin des Sciences Pharmacologiques* M. Ed. Desesquelle contributed a useful review of the therapeutic applications of beta-naphthol. It has been given internally with success as a gastro-intestinal antiseptic but it occasionally causes gastric disturbance. On this account it is preferable to administer it with sodium bicarbonate which lessens its irritating action on the gastric mucous membrane. In this form daily doses of 45 grains of beta-naphthol have been given in enteric fever without producing ill effects. In pulmonary tuberculosis good results have been obtained by intra-pulmonary injections of an emulsion containing five grains of beta-naphthol administered once a week. In furunculosis and anthrax benefit has been derived from the internal administration of daily doses of 15 grains, the treatment being associated with a vegetarian diet, with eggs and milk (*le régime ovo-lacto-végétarien*). M. Desesquelle recommends the use of beta-naphthol as an antiseptic in obstetric and in surgical practice. In the form of a 10 per cent. ointment or solution it is valuable in the treatment of acne, eczema, psoriasis, pityriasis, and many other skin affections; it may be combined with sulphur, zinc oxide, camphor, acetic acid, or resorcin. Internally, it is compatible with the salicylates, subnitrate and benzoate of bismuth, sodium bicarbonate, the oxide and carbonate of magnesium, calcium carbonate and phosphate, vegetable charcoal, and menthol. It is incompatible with mercuric chloride, producing from aqueous solutions a precipitate containing mercury. When prescribed in the form of a dusting powder care should be taken not to combine beta-naphthol with camphor, phenol, or menthol, or a liquid product will be formed. Beta-naphthol is contra-indicated in cases of renal insufficiency and where there is a deficiency of pepsin as it is likely to cause acute nephritis. Two cases have been met with in which the application of a 2 per cent. ointment for a cutaneous affection produced albuminuria, one case proving fatal. In its antiseptic properties beta-naphthol compares favourably with mercuric chloride. Investigations of the bactericidal action of beta-naphthol on staphylococcus pyogenes aureus showed that in dilutions of 1 to 3200 growth was inhibited for 24 hours and that a 1 in 2500 solution completely arrested all development.

CHANTECLAIR.

WE have received an advertisement, entitled "Chanteclair," which is published by "La Carnine Lefrancq," a company for the sale of a beef juice which has its headquarters apparently at Romainville and 78, Faubourg St. Denis, Paris. The pamphlet is composed of brief biographical notices of Professor Charles Richet and Dr. Jules Héricourt, between which are sandwiched some 30 letters from French medical men relating the "resurrections" and "unhoped," "remarkable," and "marvelous" (*sic*) results which have been obtained by the use of "Carnine Lefrancq." The thoroughly objectionable feature, however, of what would otherwise be only the ordinary advertising circular is two caricatures of Professor Richet and Dr. Héricourt respectively, purporting to show them engaged upon their scientific work. The pictures, if not so absurd, are almost as revolting as those published by anti-vivisectionist bodies. The fact that Professor Richet and Dr. Héricourt do not consider themselves deeply wronged by these caricatures will aid the more rabid anti-vivisectionists to treat the caricatures as representations of fact. The attitude of Professor Richet and Dr. Héricourt, which is one of good-natured contempt for the ignorance of those who can be moved to any sort of feeling by such rubbish as these caricatures, is one that it is easier for French than for English men of science to maintain. The French physiologist has not the same malignant stream of calumny for ever turned upon his work.

ST. ANN'S WELL, HOVE.

THE municipal authorities of Hove are to be congratulated on having acquired for the benefit of the residents in that part of what really is the town of Brighton the old Wick chalybeate spring and grounds. It would have been a pity had this picturesque rural spot passed into builders' hands. None of the open spaces in Hove can compare with this latest acquisition; it is the only naturally-wooded spot in the borough. And this beauty spot is one of considerable historic interest. In the middle of the eighteenth century a mineral spring was discovered there and it was described in a work published by Dr. Anthony Relhan in 1761, shortly after he succeeded the famous Dr. Richard Russell as Brighton's leading physician. Some years later Dr. Henderson confirmed Dr. Relhan's opinion as to the water being a valuable specific in certain complaints, and in 1805 Dr. Alexander Marcet of Guy's Hospital issued a pamphlet in which he described the water as presenting a solution of emetic tartar and a quantity of calcareous earth mixed with vitriolic acid and iron, giving it an inky taste. It was not lon before the spring was the resort of fashion, and it is on record how Queen Adelaide used to "drive up to drink the waters at the chalybeate, a sort of Spa," and Mrs. Fitzherbert writing and telling a friend of the "very essential benefit I have derived from drinking the waters of the chalybeate at the Wick, Brighton." For a time the spring seems to have lost its old prestige and it was not until about 30 years ago, when the late Dr. William Bayes of Hove contemplated establishing a "hydro" there, that there seemed a possibility of the spring becoming serviceable again. Dr. Bayes had the water analysed by the late Mr. Wanklyn of Westminster, who reported unfavourably. The source of contamination was discovered and removed and Mr. Wanklyn's second report was most favourable. But Dr. Bayes died suddenly and the project was not proceeded with further. He had, however, renamed the place St. Ann's Well—the reason for which is by no means clear—a name that remains to this day. The well-house is at present closed. The authorities have not yet had time to mature any plans for the future, but whatever may be decided upon the first step will be to insure that the water is free from contamination.

WHITSUNTIDE HOLIDAYS ON THE CONTINENT.

THE Great Eastern Railway is issuing return tickets at reduced fares to Brussels, viâ Harwich and Antwerp. Passengers leaving London in the evening reach Brussels next morning after a night's rest on board the steamer. For visiting The Hague, Scheveningen (the Dutch Brighton), and Amsterdam for the old-worl cities of the Zuyder Zee special facilities are offered viâ the company's British Royal Mail Harwich-Hook of Holland route. A corridor train, with vestibuled carriages, dining and breakfast cars, is run on the Hook of Holland service between London and Harwich. From the Hook of Holland through carriages and restaurant cars are run in the North and South German express trains to Cologne, Basle, and Berlin, reaching Cologne at noon and Basle and Berlin in the evening.

T. B. U.—The scale of fees in such circumstances wants altering considerably while no uniform method of charge exists to which we can refer our correspondent. We think that the patient might well pay some small fee. The statutory fee in the Poor-law service for amputations of fingers or toes being £2, the patient would hardly consider it harsh if he were charged a guinea.

Physician.—The question of the one-portal system has been debated over and over again in our columns. The conveniences have been pointed out in much the words used by our correspondent who has, however, taken no account of the objections.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—H. Beckett-Overy, W. J. Gow): at 7.45 P.M.

Specimens:

Mr. J. D. Malcolm: (1) A Uterus with Cancer of the Cervix removed by Wertheim's method; (2) A Cystic Ovary and Hydro-salpinx removed from a Woman aged 58 years.

Dr. T. W. Eden: A Case of Bilateral Papillary Carcinoma of the Ovary.

Dr. Cuthbert Lockyer: (1) Sarcoma of the Uterus; (2) Tubal Gestation with Unusual Pathological Features.

Dr. J. F. McCann: (1) Grape-like Sarcoma of the Cervix; (2) Bilateral Tuberculous Salpingitis.

Short Communications:

Dr. Kedarnath Das: Gastroschisis.

Papers:

Dr. J. H. Teacher: The Embedding and Development of a very Young Human Ovum.

Dr. J. W. Munro Kerr: Clinical History and Microscopical Description of an Early Ovarian Pregnancy.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—W. Jobson Horne, H. S. Barwell): at 5 P.M.

Cases and Specimens:

Dr. Watson Williams: (1) A Case of Malignant Growth of the Septum and Naso-pharynx removed by an External Osteoplastic Operation; (2) A Case of Laryngeal Disease for Diagnosis; (3) Skiagrams of the Accessory Sinuses.

Dr. Herbert Tilley: (1) Specimen of a Large Post-nasal Polypus removed from a Boy aged 14; (2) Spectroscope Slide showing well-marked Development of the Orbito-ethmoidal cells; (3) A Case of Subglottic Hyperplasia with considerable Narrowing of the Tracheal Air-way.

Mr. Clayton Fox: A Case of Paralysis of the Right Vocal Cord in a Man with Myopathia.

Mr. S. V. Cargill, Mr. William Turner, Dr. StClair Thomson: Orbital Cellulitis, Abscess of Left Frontal Cerebral Lobe, consequent on Acute Left Frontal Sinusitis; Operation; Cure.

Dr. StClair Thomson: (1) Radiographs of the Sphenoidal Sinus; (2) Cases of Submucous Resection of the Nasal Septum.

Mr. Stuart-Low: A Case after Operation for Angina Ludovici.

Dr. Dan McKenzie: A Case of Malignant Disease of the Larynx.

Dr. Jobson Horne: Preparations demonstrating the Exhibitor's Explanation of the Development of the Characteristic Appearances of Pachydermia Laryngis.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

The Annual Meeting for the Election of Officers and Members of Council for the ensuing session will be held the same afternoon at 4 P.M.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Mr. Lawford, Mr. Winfield-Roll, and others: Card Cases. 8.30 P.M., Mr. P. E. H. Adams: An Epidemic of Contagious Conjunctivitis due to the Pneumococcus. Mr. E. Nettleship: (1) Senile Cataract in Husband and Wife, Condition of Lenses in Children and Grandchildren; (2) Lamellar Cataract, Discoid ("Coppock") Cataract and Retinitis Pigmentosa in the same Family; (3) A Colour-blind Family. Lieut.-Col. H. Herbert: (1) Lower Corneal Plaques; (2) A Factor in the Production of Parenchymatous Xerosis.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

THURSDAY.—8.30 P.M., Lieut.-Col. H. E. Deane (R.), R.A.M.C.: A Plea for a More Detailed Study of the Soldier's Heart.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Collier: The Treatment of Neuritis.

WEDNESDAY.—4 P.M., Mr. L. Mummery: Clinique (Surgical) 5.15 P.M., Lecture: Dr. H. French: Points in connexion with Intercurrent Medical Illnesses during Pregnancy.

THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical) 5.15 P.M., Lecture:—Prof. T. Hewlett; The Diagnosis of Syphilis, &c., by the Antigen Method.

FRIDAY.—4 P.M., Mr. R. Lake: Clinique (Ear).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Throat, Nose, and Ear Diseases. 2.30 P.M., Operations. Dr. Abraham: Skin Diseases. 5 P.M., Lecture:—Dr. Pritchard: The Diagnosis and Treatment of Arterio-sclerosis.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Throat, Nose, and Ear Diseases. 2.30 P.M., Operations. Dr. Abraham: Skin Diseases. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations on Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Medical Out-patient (Dr. Whipham); Nose, Throat, and Ear (Mr. Carson); X Rays. 4.30 P.M., Medical In-patient Clinic (Dr. Whiting).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Surgical (Mr. Edmunds); Gynæcological (Dr. Giles). 4.30 P.M., Special Demonstration of Selected Medical Cases (Dr. G. P. Chappel).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. Whipham); Skin (Dr. Meachen); Eye (Mr. Brooks).

THURSDAY.—2.30 P.M., Special Demonstration of Gynæcological Operations (Dr. Giles). Clinics:—Medical Out-patient (Dr. Whiting); Surgical (Mr. Carson); X Rays. 3 P.M., Medical In-patient (Dr. Chappel). 4.30 P.M., Throat Operations (Mr. Carson).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Clinics:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2.15 P.M., Sir Dyce Duckworth: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. W. Turner: Surgery. 4 P.M., Mr. L. A. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2.15 P.M., Dr. R. T. Hewlett: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2.15 P.M., Dr. F. Taylor: Medicine. 2.30 P.M., Operations. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. Taylor: Jaundice.

THURSDAY.—2.15 P.M., Dr. G. Rankin: Medicine. 2.30 P.M., Operations. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2.15 P.M., Dr. R. Bradford: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: The Radical Cure of Complete Procidentia Uteri.

SATURDAY.—2.30 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

FRIDAY.—3.30 P.M., Lecture:—Dr. Tooth: Multiple Neuritis.

ROYAL INSTITUTE OF PUBLIC HEALTH, Theatre of the Institute, 37, Russell-square, W.C.

WEDNESDAY.—5 P.M., Harben Lecture:—Prof. G. H. F. Nuttall: Ticks, their Biology and Structure.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH 1, Upper Montague-Street, Russell-square, W.C.

TUESDAY.—3 P.M., Opening Meeting. Dr. J. Kerr: Address. An Exhibition of Appliances, Outfits, Record Systems, Office Requisites, &c., will be open daily from 10 A.M. to 6 P.M.

WEDNESDAY.—11 A.M., Lecture:—Dr. C. J. Thomas: Medical Inspection. 2 P.M., Visit to Schools. 5.30 P.M., Lecture:—Dr. Shrubsall: Anthropometry. Dr. Shrubsall: Physical Exercises.

THURSDAY.—10.30 A.M., Dr. Kerr: Demonstration of Special Cases. 11.30 A.M., Dr. Thomas: Office Routine, Ringworm Examination, &c. Visits to Schools. 2.30 P.M., Lecture:—Dr. Kerr: Eyes and Ears. 3.30 P.M., Lecture:—Dr. H. M. Richards: School and Home; Infectious Diseases. 5.30, P.M., Lecture:—Dr. Hogarth: School Clinics.

FRIDAY.—10.30 A.M., Dr. Kerr: Demonstration at London County Council Education Offices. Visits to Schools.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), West London (2.30 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (13th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 4th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 29	30·33	E.		124	73	52	56	62	Fine
,, 30	30·02	N.E.	0·47	111	67	55	56	58	Cloudy
,, 31	30·00	S.	...	123	75	58	64	67	Fine
June 1	29·90	S.E.	0·05	130	79	63	63	66	Cloudy
,, 2	29·95	S.	0·62	121	73	62	62	65	Cloudy
,, 3	30·05	E.	...	127	81	60	65	71	Fine
,, 4	30·03	E.	0·03	118	79	63	63	67	Fine

During the week marked copies of the following newspapers have been received:—*Leicester Daily Post, Australasian Medical Gazette, Bristol Weekly Mercury, Financial Times, Standard, Dundee Advertiser, Birmingham Post, Daily Telegraph, The Field, Westminster Gazette, Irish Independent, South Eastern Gazette, Daily Chronicle, Liverpool Post, Aberdeen Journal, Birmingham Dispatch, Yorkshire Observer, Western Mercury, Glasgow Weekly Citizen, &c.*

Communications, Letters, &c., have been received from—

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